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November 1980

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SOCIOECONOMIC TECHNICAL REPORT

for the

ETSI Coal Slurry Pipeline Project

November 7, 1980

Prepared By

Woodward-Clyde Consultants

for the

Bureau of Land Management

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Chapter 1
INTRODUCTION

Energy Transportation Systems Inc. (ETSI), a joint venture of Bechtel, Kansas-Nebraska Natural Gas Co., Lehman Brothers Kuhn Loeb, and United Energy Resources, was organized in 1973 to develop and construct a coal slurry pipeline to transport low-sulfur western coal to power plants in the Midsouth. The initial concept of the ETSI system involved the construction of a 1000-mile coal transportation system from Wyoming to Arkansas that would deliver 25 million tons annually (MMTA) of coal.

In 1974, ETSI requested a right-of-way permit from the Department of the Interior (DOI) to cross 37 miles of federal land in Wyoming. The response of DOI was that, in accordance with the National Environmental Policy Act (NEPA) of 1969, an environmental impact statement (EIS) was required before any decision regarding the application could be made. In 1975, the Bureau of Land Management (BLM) was designated as the lead agency responsible for the preparation of the EIS.

As now presented, the purpose of the proposed coal slurry pipeline system is to transport about 37.4 MMTA of low-sulfur western coal from Wyoming to power plants in Oklahoma, Arkansas, and Louisiana. The coal transported by the proposed project would be used to generate electric power for major portions of these states.

The purpose of this report is to present the detailed socioeconomic analysis associated with this proposed project. The document is self-contained and can be understood without reference to the EIS as far as the socioeconomic aspects of the proposed action and the pipeline alternatives are concerned. For a discussion of the no-action alternative and the socioeconomic aspects of that alternative, the reader is referred to the No-Action Railroad Technical Report (WCC 1980a).

The document is organized into five remaining chapters. Chapter 2 describes the proposed action and each of the pipeline alternatives, and presents the construction schedule and manpower requirements for each. Chapter 3 sets forth the methodology used in the analysis. Chapters 4, 5, and 6 present the socioeconomic analysis of the areas potentially affected by construction and operation of the pipeline: Chapter 4 concerns the four-county area in Wyoming that would have the most concentrated project-related activity. Chapter 5 contains the analysis of 14 areas potentially affected by construction and operation of the dewatering plants, pipeline and related facilities. Chapter 6 discusses another eight areas affected only by construction and operation of the pipeline. Detailed supporting material relating to these areas appears in the Appendix.

CHAPTER TWO

PROJECT DESCRIPTION

The major components of the proposed coal slurry transportation project and its alternatives are described in this section. As construction and operation employment would be the primary source of any socioeconomic effects the project description emphasizes manpower requirements and scheduling. Technical information on the project components may be found in the Project Description Technical Report. Map 2-1 shows the general arrangement of the major components of the proposed action and the major alternatives.

The simplified overview of the proposed action and alternatives shown in Table 2-1 is intended to distinguish the differences and to illustrate the relationships between the proposed action and the alternatives.

According to the proposed action, a coal slurry pipeline would transport Wyoming coal to nine power plants in Oklahoma, Arkansas, and Louisiana.

In addition to the proposed action ETSI is considering several market configurations which are assessed in this technical report and the EIS at an equal level of effort. The market alternative would follow a somewhat different route, to serve a slightly different set of power plants.

The Cypress Bend pipeline-barge alternative would transport coal slurry by pipeline to a barge loading facility at Cypress Bend, Arkansas, with deliveries in Oklahoma and Arkansas. The remaining coal would be dewatered and transported by barge on the Mississippi River to delivery sites in Louisiana.

Table 2-2 compares alternative sites of dewatering plants and capacities under the proposed action and the alternatives.

The Colorado alternative pipeline route would circumvent Nebraska and connect with the proposed action route or the market alternative route in Kansas.

Water for the coal slurry mixture under the proposed action would come from wells drilled into the Madison Formation in Niobrara County, Wyoming. Two alternative main water sources are wells drilled into the Madison Formation in Crook County, Wyoming, and water transported by a new pipeline from the existing Oahe Reservoir near Pierre, South Dakota.

An optional coal cleaning operation is under consideration as an integral part of the coal preparation plants and socioeconomic implications were analyzed. The slurry pipeline water discharge option (as opposed to use as power plant make up water) would not have significantly different labor inputs to warrant analysis.

PROPOSED ACTION

General Description

The proposed coal slurry transportation project would consist of four major operating facilities: (1) coal slurry preparation plants; (2) water supply system; (3) coal slurry pipelines and pump stations; and (4) coal slurry dewatering plants.

Construction of the proposed project would begin about January 1983 and would continue in phases until 1989 (Figures 2-1 and 2-2). Operation would begin approximately in early 1985 and continue for 50 years. This 50-year project period is based on the minimum design life of the system. The schedules presented here were used to establish parameters for impact assessment. They are assumptions provided by ETSI and are subject to change.

Table 2-3 shows the work force needed for construction of the proposed coal transportation project. Table 2-4 lists the operating personnel required for the 37.4 MMTA throughput.

Coal Slurry Preparation Plants. According to the proposed action, three coal slurry preparation plants would be located on private land in the Powder River Basin of northeastern Wyoming (Maps A-2 and A-3, Appendix A[a]). The 22.4 MMTA Jacobs Ranch plant would process coal from the Jacobs Ranch and Black Thunder mines; the 5.0 MMTA North Rawhide plant would process coal from the

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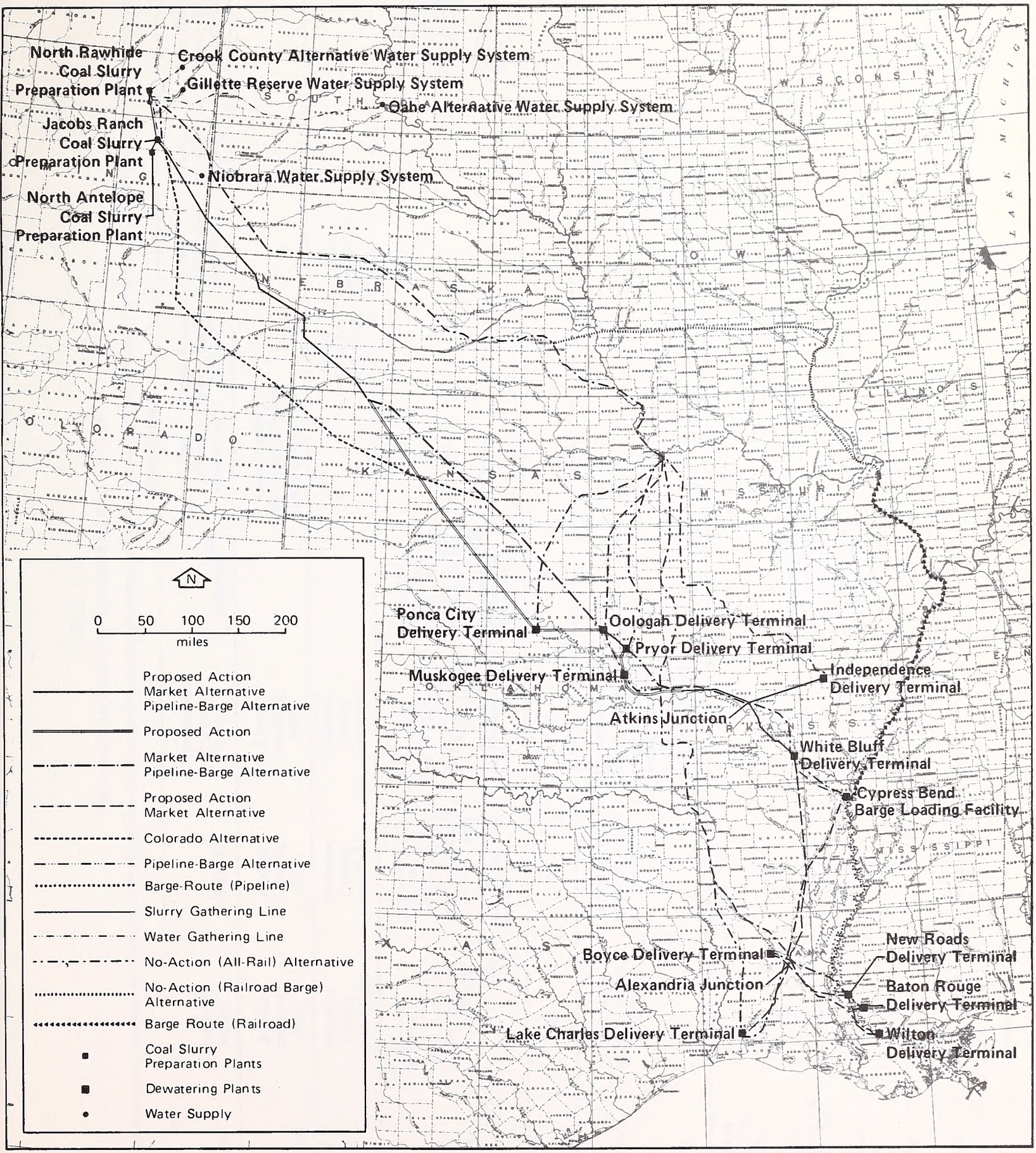
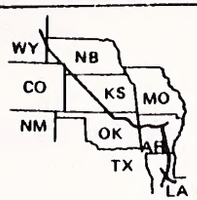
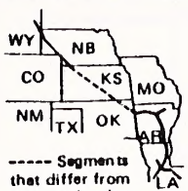
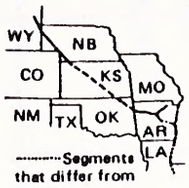
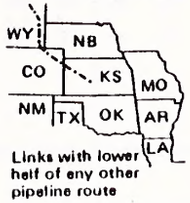
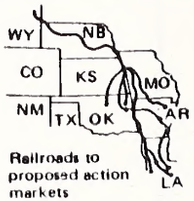
[a]Appendix A of the ETSI EIS (Map Volume)



Map 2-1. LOCATION AND GENERAL ARRANGEMENT OF PROPOSED COAL SLURRY TRANSPORTATION PROJECT AND ALTERNATIVES

TABLE 2-1

PROPOSED ACTION AND ALTERNATIVES OVERVIEW[a]

Project Components	Proposed Action[b]	Alternatives							
		Market[c]	Cypress Bend Pipeline–Barge[c]	Colorado[b,d]	Coal Cleaning Operation[c]	Crook County Water Supply System[b]	Oahe Water Supply System[b]	Slurry Pipeline Discharge[c]	No-Action[b] • All-rail • Rail-barge
Slurry Preparation Plants (number)	3 (coal crushing only)	3 (coal crushing only)	3 (coal crushing only)		Coal crushing and cleaning before slurry preparation				
Water Supply System (major source)	Niobrara County well field	Niobrara County well field	Niobrara County well field			Crook County well field	Oahe Reservoir		
Main Slurry Pipeline Route		 ----- Segments that differ from proposed action	 ..... Segments that differ from market	 Links with lower half of any other pipeline route					 Railroads to proposed action markets
Slurry Pump Stations	23	22	15	5					
Dewatering Plants (number)	9 (extracted water to power plants)	9 (extracted water to power plants)	5 (extracted water to power plants, except at Cypress Bend, where it would be treated and discharged)					Extracted water treated and discharged into rivers	
Markets Served									
Ponca City, OK	X								
Oologah, OK		X	X						
Pryor, OK	X	X	X						
Muskogee, OK	X			Can be linked to any other pipeline route to serve any market listed					Can serve any market listed
Independence, AR	X	X	X						
White Bluff, AR	X	X	X						
Boyce, LA	X	X							
Lake Charles, LA	X	X							
New Roads, LA	X	X	X						
Wilton, LA	X	X	X						
Baton Rouge, LA		X	X						

[a] Not intended to be definitive. Simplified to emphasize differences.

[b] Decision-maker alternative.

[c] ETSI system-design alternative.

[d] Colorado alternative is only an alternative northern pipeline segment.

TABLE 2-2

COMPARISON OF DEWATERING PLANTS AND ULTIMATE CAPACITIES UNDER THE PROPOSED ACTION, MARKET ALTERNATIVE, AND PIPELINE/BARGE ALTERNATIVE

Dewatering Plants	Ultimate Deliveries (MMTA)		
	Proposed Action	Market Alternative	Pipeline/Barge Alternative
Ponca City	6.6	-	-
Oologah	-	3.5	3.5
Pryor	3.0	5.3	5.3
Muskogee	5.0	-	-
Independence	5.0	5.0	5.0
White Bluff	5.0	5.0	5.0
Boyce	1.8	1.8	-
Lake Charles	4.0	4.0	-
New Roads	2.0	2.0	-
Wilton	5.0	5.0	-
Baton Rouge	-	5.8	-
Cypress Bend	-	-	18.9

FIGURE 2-1

ASSUMED PIPELINE AND PUMP STATION CONSTRUCTION SCHEDULE: PROPOSED ACTION

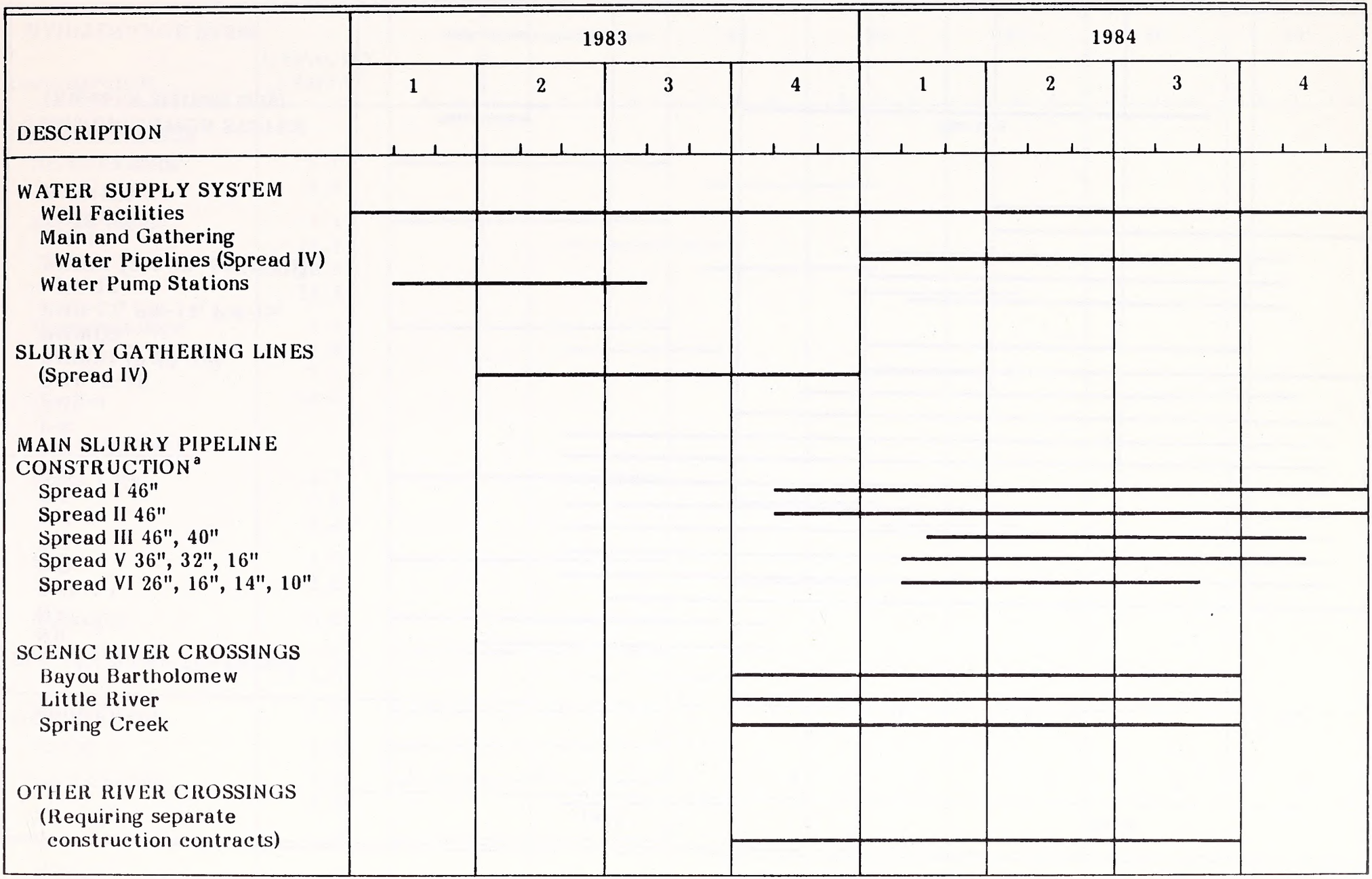
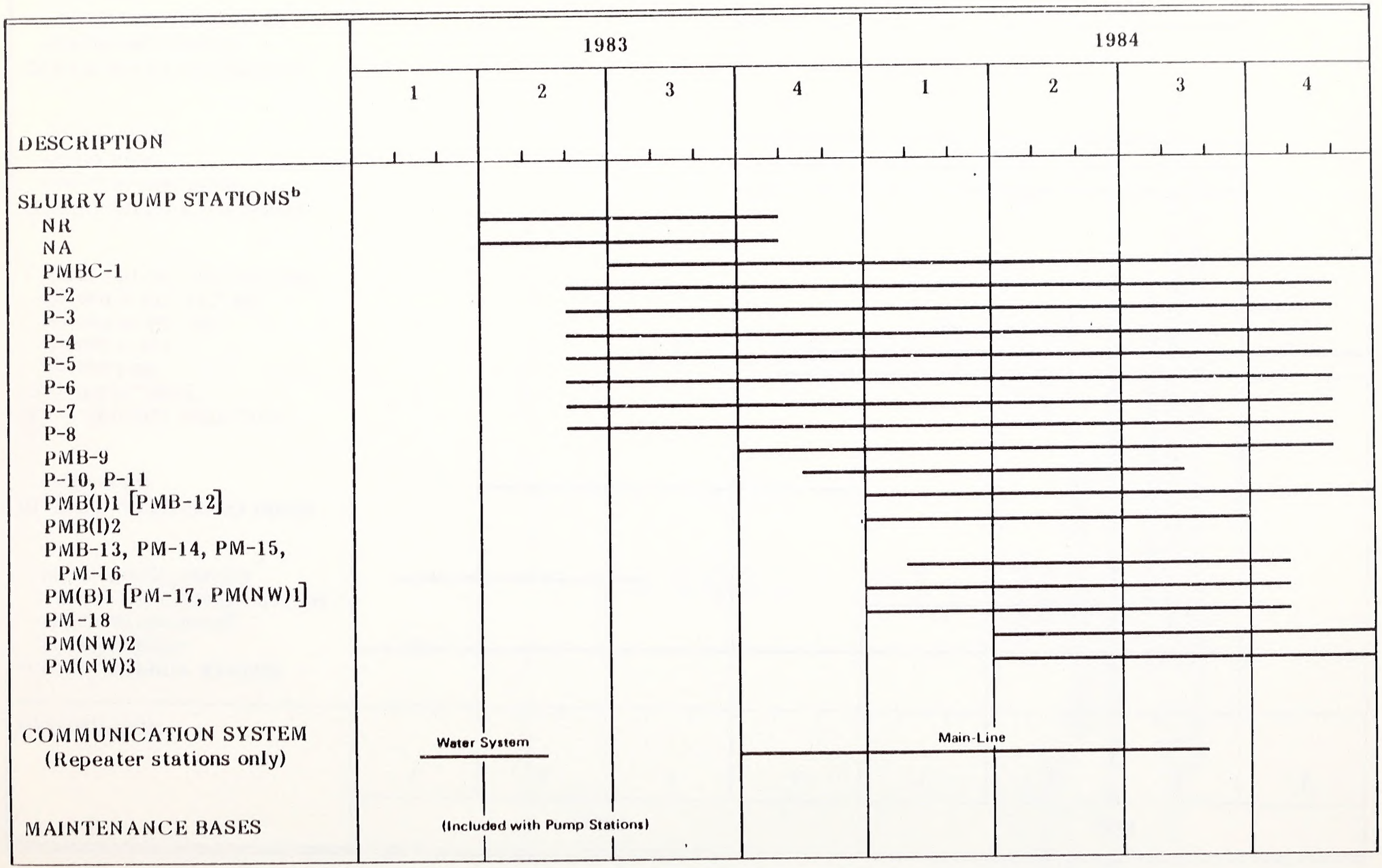


FIGURE 2-1 (concluded)

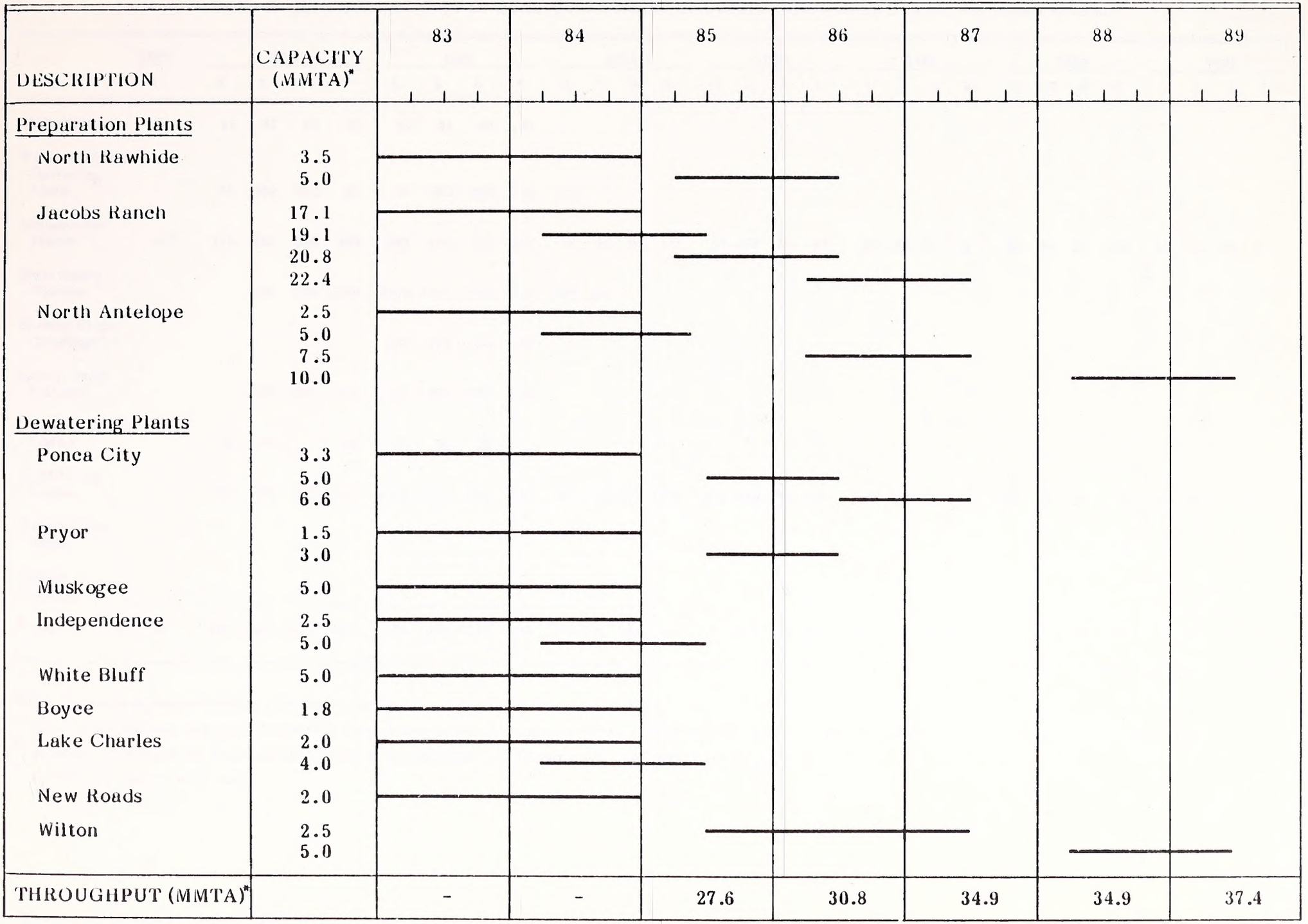


[a]See Table 1-8 for spread locations.

[b]See strip maps in Appendix A of the EIS for description of symbols and locations of pump stations. There are only 23 different slurry pump station locations; pump stations shown in brackets are at same location as first pump station listed in the row.

FIGURE 2-2

ASSUMED PREPARATION AND DEWATERING PLANTS CONSTRUCTION SCHEDULE: PROPOSED ACTION



DESCRIPTION	CAPACITY (MMTA)*	83	84	85	86	87	88	89
Preparation Plants								
North Rawhide	3.5							
	5.0							
Jacobs Ranch	17.1							
	19.1							
	20.8							
	22.4							
North Antelope	2.5							
	5.0							
	7.5							
	10.0							
Dewatering Plants								
Ponca City	3.3							
	5.0							
	6.6							
Pryor	1.5							
	3.0							
Muskogee	5.0							
Independence	2.5							
	5.0							
White Bluff	5.0							
Boyce	1.8							
Lake Charles	2.0							
	4.0							
New Roads	2.0							
Wilton	2.5							
	5.0							
THROUGHPUT (MMTA)*		-	-	27.6	30.8	34.9	34.9	37.4

* Millions of (short) tons annually

TABLE 2-3

ASSUMED QUARTERLY BUILDUP OF QUARTERLY BUILDUP OF CONSTRUCTION WORK FORCE: PROPOSED ACTION

	1982	1983				1984				1985				1986				1987				1988				1989			
	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Well Field		41	41	41	41	41	41	41	41																				
Water & Slurry Gathering Lines		60	360	360	60	60	260	260	30	15																			
Preparation Plants	34[c]	129	189	259	342	402	440	338	202	66	83	95	57	81	107	91	92	93	61	58	33	20	26	21	49	56	25	18	5
Main Slurry Pipeline			100	500	2950	2950	2950	2950	2950	300	100																		
Special River Crossings[a]						150	150	150	150																				
Slurry Pump Stations			265	685	975	1870	1970	1680	945																				
Communication System		20	20		20	20	20	20																					
Dewatering Plants		58	378	726	1155	1332	1182	903	488	145	140	105	173	204	240	230	192	150	83	18		20	45	65	70	60	40		
Maintenance Bases[b]																													
Testing & Startup										260	260																		
Total	34[c]	308	1353	2571	5543	6825	7013	6342	4806	786	583	200	230	285	347	321	284	243	144	76	33	40	71	86	119	116	65	18	5

Note: Numbers represent number of workers required.

[a] River crossings that may require separate construction contracts (Appendix D-6). Standard crossings are included in main slurry pipeline construction work force.

[b] Numbers of workers are incorporated in respective preparation and dewatering plant work force requirements.

[c] Initial mobilization work force.

TABLE 2-4

SUMMARY OF OPERATING PERSONNEL: PROPOSED ACTION

Location	Total
Headquarters (Denver)	41
Western District (Jacobs Ranch)	
Administration	4
Water Supply	11
Preparation Plants	196
Pipelines	9
Maintenance Base	23
Subtotal	243
Central District (Pryor)	
Administration	3
Dewatering Plant	64
Pipeline	24
Maintenance Base	33
Subtotal	124
Eastern District (White Bluff)	
Administration	3
Dewatering Plants	110
Pipeline	18
Maintenance Base	47
Subtotal	178
Southern District (New Roads)	
Administration	3
Dewatering Plants	93
Pipeline	24
Maintenance Base	47
Subtotal	167
Total	753

North Rawhide and Buckskin mines; and the 10.0 MMTA North Antelope plant would process coal from the North Antelope and Antelope mines.

The preparation plants would be constructed in phases from 1983 to 1989, as the pipeline throughput increased (Figure 2-2).

A maximum work force of approximately 440 persons would be required to construct the three preparation plants to initial capacity. An estimated maximum of 107 construction workers would be needed to increase the total capacity of the three plants to 37.4 MMTA (Table 2-3). A total of 196 people would be required to operate the plants--117 at Jacobs Ranch, 27 at North Rawhide, and 52 at North Antelope.

Water Supply System. The water supply system would supply the 20,500 acre-feet of water required annually to operate the coal transportation system. Approximately 20,000 acre-feet per year would be needed to transport 37.4 MMTA of coal from Wyoming. At the preparation-plant sites, 200 acre-feet would be needed to make up for evaporation from the storage ponds, as well as for dust suppression, plant washdown, and other uses not connected with slurry. Some of this water could be reused for slurry makeup, thereby reducing the total quantity required from the well field. At pump station storage ponds, 300 acre-feet per year would be required to make up for evaporation.

The water supply system would include two components: (1) a main supply source (the Niobrara County well field); and (2) a reserve supply (which could be purchased from Gillette, Wyoming--see Map 2-2). In addition, a well at each slurry pump station in Wyoming, Nebraska, Kansas, and Oklahoma would provide the water to make up for storage pond evaporation. However, since rainfall would exceed evaporation at stations in Arkansas and Louisiana, water for such makeup would not be required in these locations.

The Niobrara County well field would consist of 5 monitoring wells and approximately 40 production wells drilled to an average depth of 4,000 feet (Map A-53, Appendix A). The number of production wells may vary, depending on the yield of the wells.

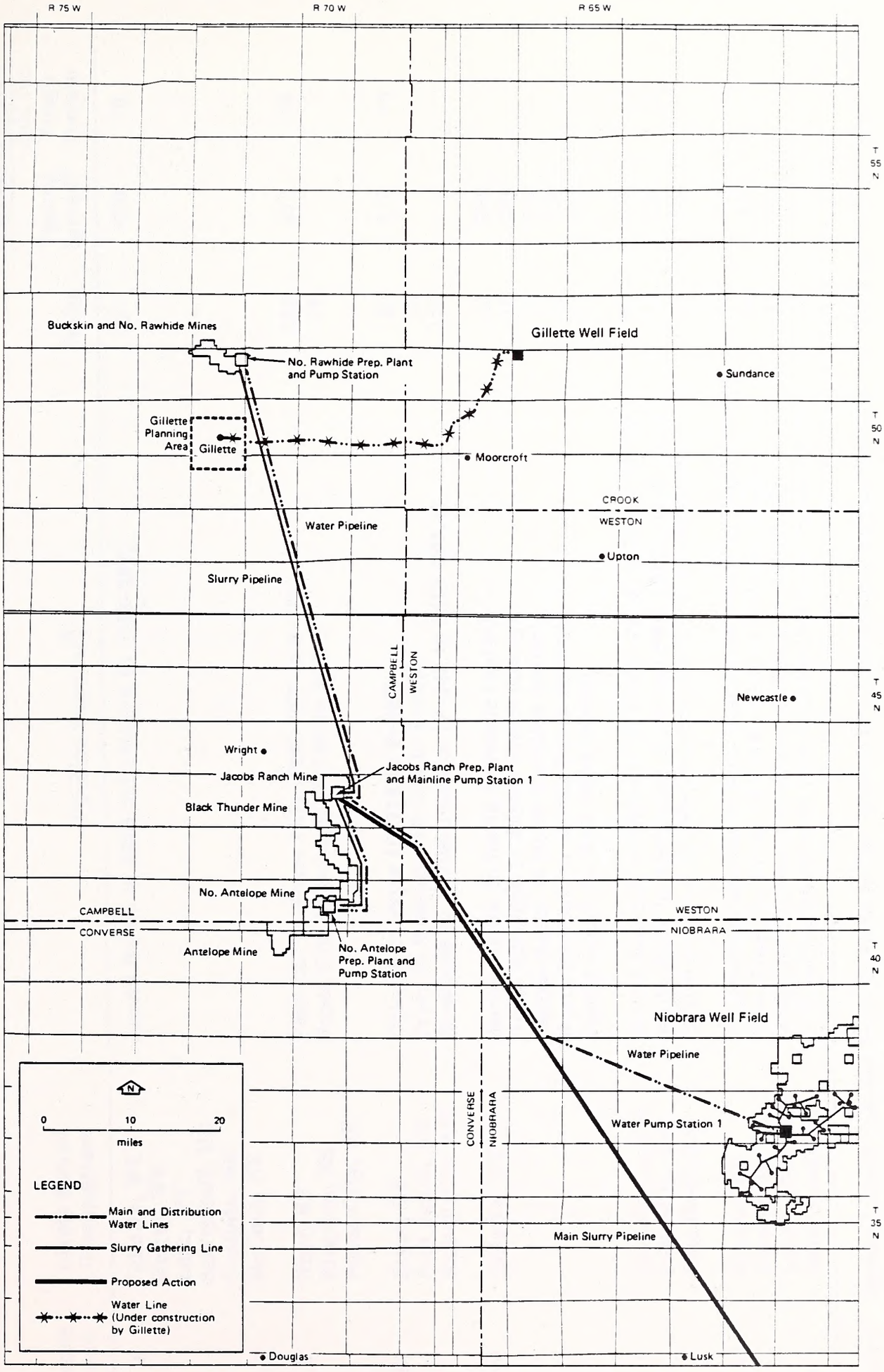
The reserve water supply system would consist of an ETSI-built pump station that would be located at the intersection of the well-field pipeline (being constructed by Gillette) and the Jacobs Ranch-North Rawhide water distribution pipeline (to be constructed by ETSI). The pipelines would intersect approximately 7 miles south of the proposed North Rawhide preparation plant. The pump station would direct surplus Gillette water in either direction--to North Rawhide or Jacobs Ranch. ETSI and the city of Gillette have signed a memorandum of understanding regarding the purchase of Gillette water.

Construction of the water supply system would begin in 1983 and end in late 1984. A construction work force of approximately 41 would be required (Table 2-3). Approximately 11 people would be needed to operate the water supply system.

Coal Slurry Pipelines and Pump Stations. Two buried slurry gathering lines, a buried main slurry pipeline, and 23 slurry pump stations would be required. Slurry from the North Rawhide and North Antelope preparation plants would be transported via 54-mile, 32-inch O.D. (outside diameter) and 16-mile, 16-inch O.D. gathering pipelines, respectively, to the origin of the main slurry pipeline at the Jacobs Ranch plant. The main pipeline would extend 1,664 miles from Jacobs Ranch to the delivery sites in Oklahoma, Arkansas, and Louisiana. The 46-inch diameter of the main pipeline would gradually decrease south of Pryor, Oklahoma, in order to maintain the correct rate of flow after each slurry delivery.

The slurry pipelines and pump stations would be constructed during 1983 through mid-1984. A work force of approximately 2,950 people, organized as six construction teams or "spreads," would work concurrently on various sections of the line. Spread responsibilities and manpower requirements of the six spreads are listed in Table 2-5.

Pipeline construction techniques for a coal slurry pipeline are the same as for conventional pipelines. Typically, pipelines are laid in a continuous operation by a spread. The spread consists of equipment and crews handling various types of construction activities for a given pipeline segment.



Map 2-2. PROPOSED ACTION WATER SUPPLY SYSTEM

TABLE 2-5

PIPELINE SPREAD RESPONSIBILITIES: PROPOSED ACTION

Pipeline Spread	Likely Spread Headquarters	Pipeline Segment[a]	Miles	Workers Required	
				Typical Spread[b]	Add for Rough Terrain
I	Gillette, WY Wright, WY Lusk, WY Scottsbluff, NB Ogallala, NB McCook, NB	Jacobs Ranch to PMB-367 (PMB-0 to PMB-367)	367	670	78
II	Hays, KS Kingman, KS Ponca City, OK	PMB-367 to Ponca City (PMB-367 to P-700) Ponca City to Oologah (P-700 to P-778)	333 78	670	78
III	Pryor, OK Fort Smith, AR Russellville, AR	Oologah to Pryor (P-778 to P-808) Pryor to Muskogee (P-808 to P-840) Muskogee to Atkins Junction (P-840 to PMB-997.4)	30 32 157	610	78
IV	Gillette, WY	Jacobs Ranch to North Antelope (water) North Antelope to Jacobs Ranch (slurry) Jacobs Ranch to North Rawhide (water) North Rawhide to Jacobs Ranch (slurry) Jacobs Ranch to Well Field (water)	16 16 55 55 68	260 390 260 390 390	- - - - -
V	Russellville, AR Batesville, AR Pine Bluff, AR	Atkins Junction to White Bluff (PMB-997.4 to PMB-1077.6) White Bluff to Alexandria Junction (PMB-1077.6 to PM 1315) Atkins Junction to Independence (PMB(I)-0 to PMB(I)-93)	80 238 93	550 550 260	65 65 -
VI	Monroe, LA Alexandria, LA Lake Charles, LA Baton Rouge, LA	Alexandria Junction to New Roads (PM(NW)-0 to PM(NW)-75.6) New Roads to Wilton (PM(NW)-75.6 to PM(NW)-141.5) Alexandria Junction to Boyce (PM(B)-0 to PM(B)-24) Alexandria Junction to Lake Charles (PM-1315 to PM-1404)	76 66 24 89	390 260 260 260	- - - -

Notes: Spread I would proceed from south to north. Spread IV would proceed as shown above. All other spreads would proceed from north to south.

[a] Explanation of milepost (MP) designations is included in Appendix A.

[b] Numbers represent maximum number of workers per pipeline spread.

Approximately 75 people would be required to operate the pipeline and associated pump stations. The pipeline right-of-way would be inspected periodically by aerial patrol. Surface traffic would be limited to valve maintenance and to emergency repairs to the pipeline or erosion control devices.

Coal Slurry Dewatering Plants. Each of the delivery terminals would have a slurry dewatering plant to separate the coal from the water. This separation process involves heating, centrifugation, heat exchanging, and cooler drying. Extracted water would be further treated by flocculation to remove fine, suspended coal particles. In the adjacent power plants, the dried coal would be used for fuel and the water would be used for cooling-water makeup or other in-plant uses. Each dewatering plant would require approximately 15 acres.

Dewatering plant construction would begin in 1983 and be completed in 1989. A work force ranging from 378 in 1983 to a peak of 1,332 in 1984 would be required to construct the dewatering plants (Table 2-3). Approximately 267 people would be required to operate the plants. Work force requirements and schedules for individual dewatering plants are given later in the sections analyzing impacts from dewatering permits. Because of relatively small labor impacts, the power supply system, communication system, and supervisory control system did not warrant analysis for socioeconomic impact and were not assessed.

MARKET ALTERNATIVE

General Description

The market alternative would greatly resemble the proposed action, but it would serve two different markets--Oologah, Oklahoma, and Baton Rouge, Louisiana, instead of Ponca City and Muskogee, Oklahoma. This would necessitate changes to the main slurry pipeline route, the two dewatering plant locations, and individual preparation plant throughputs (although the total project throughput of 37.4 MMTA would remain the same). In all states but Kansas and Oklahoma, the main slurry pipeline route would be essentially the same as the proposed action route.

The construction schedules for the water supply system, slurry supply lines, mainline construction spreads, communication system, and maintenance bases would be the same as those for the proposed action (Figures 2-1 and 2-2). Figures 2-3 and 2-4 present the construction schedule for the other project components under the market alternative.

Table 2-6 shows the construction work force required for the project. Table 2-7 lists the operating personnel required.

Project Components

Coal Slurry Preparation Plants. In the market alternative the capacities of the coal slurry preparation plants would differ from those of the proposed action: the North Rawhide plant would have a capacity of 13.1 MMTA; the Jacobs Ranch plant would have a capacity of 14.3 MMTA; and the North Antelope plant would have a capacity of 10.0 MMTA.

Slurry Pipelines and Pump Stations. Market alternative pipeline spread responsibilities and manpower requirements are listed in Table 2-8.

CYPRESS BEND PIPELINE-BARGE ALTERNATIVE

General Description

Under the Cypress Bend pipeline-barge alternative coal slurry would be transported by pipeline along the market alternative route from Jacobs Ranch, Wyoming, to the White Bluff, Arkansas, delivery terminal. Coal deliveries would be made at the same terminals served by the market alternative along this part of the route (Oologah and Pryor, Oklahoma; Independence and White Bluff, Arkansas). A lateral pipeline with one pump station would be constructed from White Bluff eastward 81 miles to a barge-loading facility at Cypress Bend, Arkansas. Coal would be transported by barge to the Louisiana delivery terminals at New Roads, Baton Rouge, and Wilton (Map 2-1).

In addition to coal slurry preparation plants, a water supply system, coal slurry pipelines and pump stations, and dewatering plants, this alternative would include a barge-loading facility at Cypress Bend, AR.

FIGURE 2-3

ASSUMED PIPELINE AND PUMP STATION CONSTRUCTION SCHEDULE: MARKET ALTERNATIVE

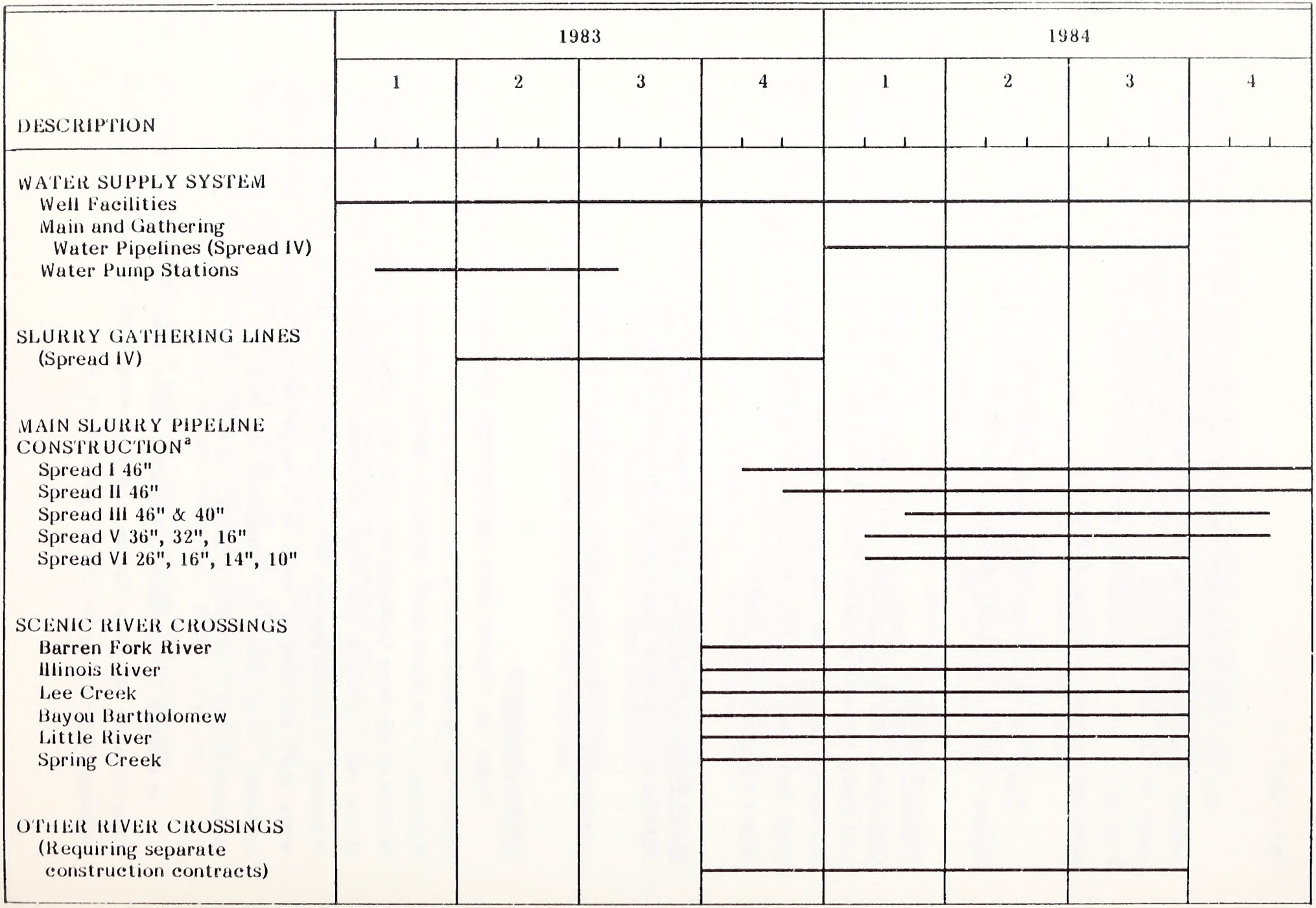
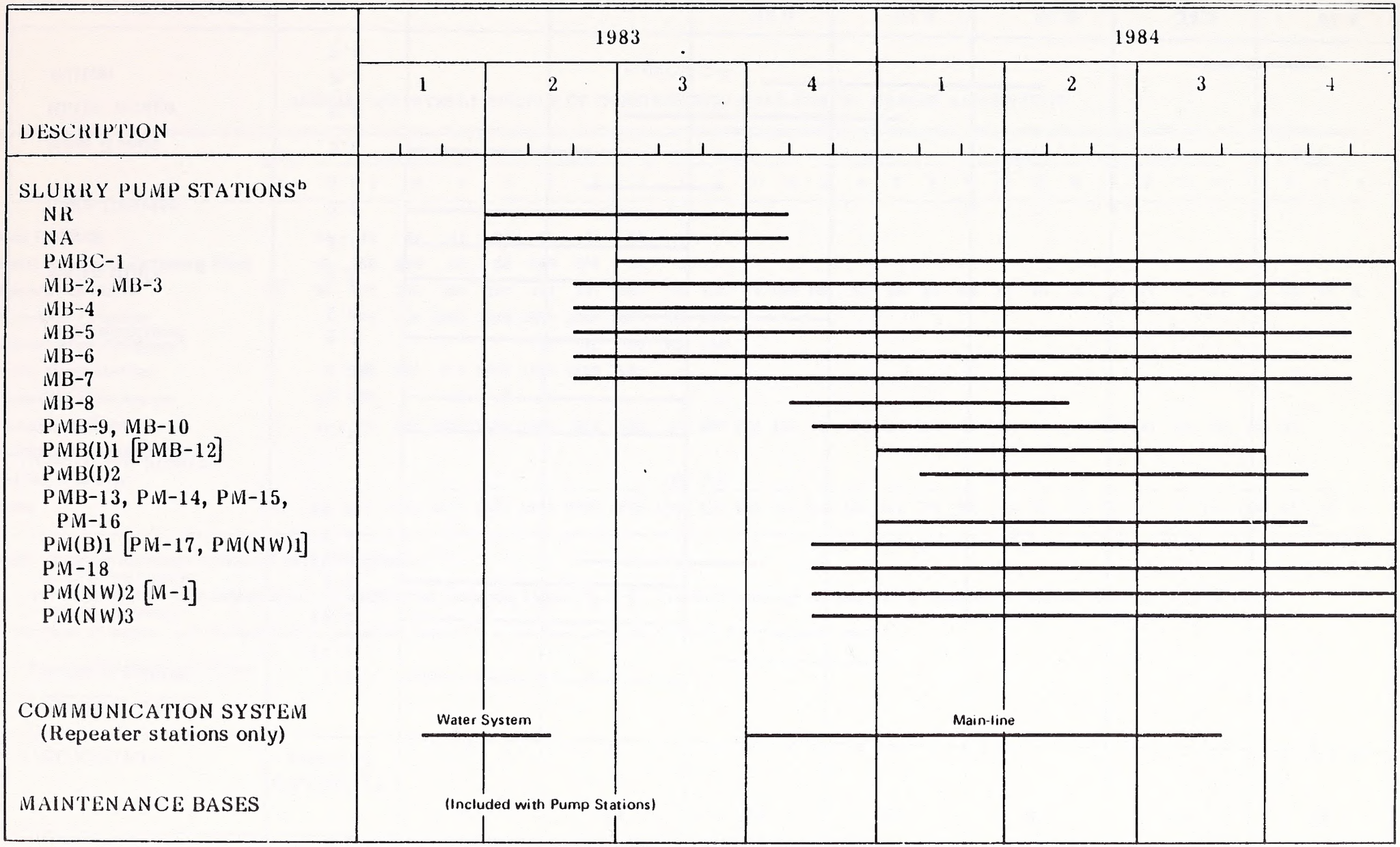


FIGURE 2-3 (concluded)

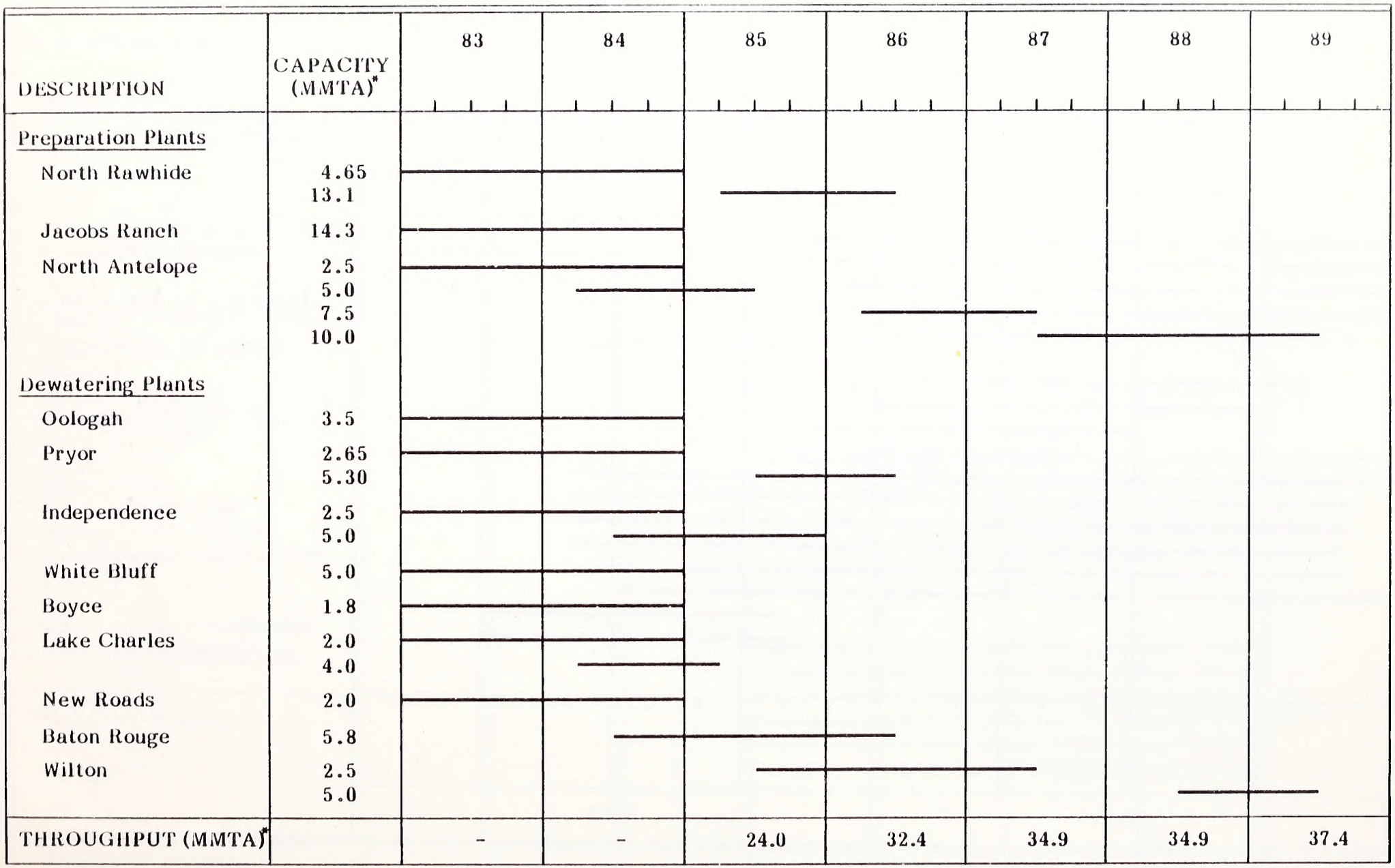


[a]See Table 1-12 for spread locations.

[b]See strip maps in Appendix A for description of symbols and locations of pump stations. There are only 22 different slurry pump station locations; pump station shown in brackets is at same location as first pump station listed in the row.

FIGURE 2-4

ASSUMED PREPARATION AND DEWATERING PLANTS CONSTRUCTION SCHEDULE: MARKET ALTERNATIVE



DESCRIPTION	CAPACITY (MMTA)*	83	84	85	86	87	88	89
Preparation Plants								
North Rawhide	4.65							
	13.1							
Jacobs Ranch	14.3							
North Antelope	2.5							
	5.0							
	7.5							
	10.0							
Dewatering Plants								
Oologah	3.5							
Pryor	2.65							
	5.30							
Independence	2.5							
	5.0							
White Bluff	5.0							
Boyce	1.8							
Lake Charles	2.0							
	4.0							
New Roads	2.0							
Baton Rouge	5.8							
Wilton	2.5							
	5.0							
THROUGHPUT (MMTA)*		-	-	24.0	32.4	34.9	34.9	37.4

* Millions of (short) tons annually

TABLE 2-6

ASSUMED QUARTERLY BUILDUP OF CONSTRUCTION WORK FORCE: MARKET ALTERNATIVE

	1982	1983				1984				1985				1986				1987				1988				1989			
	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Well Field		41	41	41	41	41	41	41	41																				
Water and Slurry Gathering Lines		60	360	360	60	90	260	260	30	15																			
Preparation Plants	29[c]	96	145	206	300	380	414	387	325	165	154	72	126	105	53	56	67	62	34	40	19	5	11	21	49	56	25	18	5
Main Slurry Pipeline			100	500	2950	2950	2950	2950	2950	300	100																		
Special River Crossings[a]							150	150	150	150	150																		
Slurry Pump Stations			265	685	975	1870	1970	1680	945																				
Communication System		20	20		20	20	20																						
Dewatering Plants		52	295	587	1031	1202	1063	815	435	154	207	224	353	413	402	310	203	93	43			20	45	65	70	60	40		
Maintenance Bases[b]																													
Testing & Startup	—	—	—	—	—	—	—	—	—	260	260	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	29[c]	269	1226	2379	5377	6553	6868	6283	4876	1044	871	296	479	518	455	366	270	155	77	40	19	25	56	86	119	116	65	18	5

Note: Numbers represent number of workers required.

[a] River crossings that may require separate construction contracts (Appendix D-6). Standard crossings are included in main slurry pipeline construction work force.

[b] Numbers of workers are incorporated in respective preparation and dewatering plants work force requirements.

[c] Initial mobilization work force.

TABLE 2-7

SUMMARY OF OPERATING PERSONNEL:
MARKET ALTERNATIVE

Location	Total
Headquarters	41
Western District (Jacobs Ranch)	
Administration	4
Water Supply	11
Preparation plant	196
Pipeline	9
Maintenance Base	23
Subtotal	243
Central District (Pryor)	
Administration	3
Dewatering Plant	57
Pipeline	24
Maintenance Base	33
Subtotal	117
Eastern District (White Bluff)	
Administration	3
Dewatering Plants	73
Pipeline	18
Maintenance Base	47
Subtotal	141
Southern District (New Roads)	
Administration	3
Dewatering Plants	137
Pipeline	24
Maintenance Base	47
Subtotal	211
Total	753

TABLE 2-8

PIPELINE SPREAD RESPONSIBILITIES: MARKET ALTERNATIVE

Pipeline Spread	Likely Spread Headquarters	Pipeline Segment[a]	Miles	Workers Required	
				Typical Spread[b]	Add for Rough Terrain
I	Gillette, WY Wright, WY Lusk, WY Scottsbluff, NB Ogallala, NB McCook, NB	Jacobs Ranch (PMB-0) to MB-12	390	670	78
II	Russell, KS Wichita, KS Bartlesville, OK	MB-12 to Pryor (MB-407.5)	396	670	78
III	Bartlesville, OK Fort Smith, AR Russellville, AR	Pryor to Atkins Junction (MB-407.5 to PMB-997.4)	162	610	78
IV	Gillette, WY	Jacobs Ranch to North Antelope (water)	16	260	-
		North Antelope to Jacobs Ranch (slurry)	16	390	-
		Jacobs Ranch to North Rawhide (water)	54	260	-
		North Rawhide to Jacobs Ranch (slurry)	54	390	-
		Jacobs Ranch to Well Field (water)	68	390	-
V	Russellville, AR	Atkins Junction to White Bluff (PMB-997.4 to PMB-1077.6)	80	550	65
	Batesville, AR	White Bluff to Alexandria Junction (PMB-1077.6 to PM 1315)	238	550	65
	Pine Bluff, AR	Atkins Junction to Independence (PMB(I)-0 to PMB(I)-93)	93	260	-
VI	Monroe, LA	Alexandria Junction to New Roads (PM(NW)-0 to PM(NW)-75.6)	76	390	-
	Alexandria, LA	New Roads to Wilton (PM(NW)-75.6 to PM(NW)-141.5)	66	260	-
	Lake Charles, LA	Alexandria Junction to Boyce (PM(B)-0 to PM(B)-24)	24	260	-
	Baton Rouge, LA	Alexandria Junction to Lake Charles (PM-1315 to PM-1404)	89	260	-
		New Roads to Baton Rouge (M-0 to M-24.4)	24	260	-

Notes: Spread I would proceed from south to north; spread IV would proceed as shown above; the remaining spreads would proceed from north to south.

[a] Explanation of milepost (MP) designations is included in Appendix A.

[b] Numbers represent maximum number of workers per pipeline segment.

The construction schedule for this alternative is shown in Figures 2-5 and 2-6. Table 2-9 shows the construction work force required for the project. Table 2-10 lists the operating personnel requirements.

Coal Slurry Preparation Plants. The North Rawhide plant would process 18.9 MMTA, the Jacobs Ranch plant would process 8.5 MMTA, and the North Antelope plant would process 10.0 MMTA. The schedules for capacity buildup and the expansion of delivery capabilities of the plants are shown in Figure 2-6.

Slurry Pipelines and Pump Stations. Pipeline/barge alternative pipeline spread responsibilities and manpower requirements are listed in Table 2-11.

Dewatering Plants. The dewatering plants for this alternative would resemble those for the market alternative except that a large coal-fired boiler would be required to supply the heat necessary for dewatering the Cypress Bend barge-loading site. The boiler would burn pipeline-supplied coal at a rate of 300,000 tons per year (0.3 MMTA).

Barge Loading Facility. The Cypress Bend barge-loading facility would be sized to load 18.6 MMTA of coal for delivery to downstream customers.

A conveyor would transfer coal from the dewatering plant to two stockpiles at the barge-loading facility. In addition to the loading area, the terminal would provide for two 100-foot-long staging areas for full and empty barges. Construction of the terminal dock would be done by driving the sheet piles from a barge operation; no dredging would be required.

Barges would be loaded on a round-the-clock schedule at a rate of 2 barges per hour. Each tow would consist of 15 to 20 barges pulled by one tugboat. An average of 2 tows would leave the facility each day.

COLORADO ALTERNATIVE

The Colorado alternative is considered to be a decision maker's alternative. It would bypass Nebraska by going south into Colorado, as shown on Map 2-1.

FIGURE 2-5

ASSUMED PIPELINE AND PUMP STATION CONSTRUCTION SCHEDULE:
CYPRESS BEND PIPELINE-BARGE ALTERNATIVE

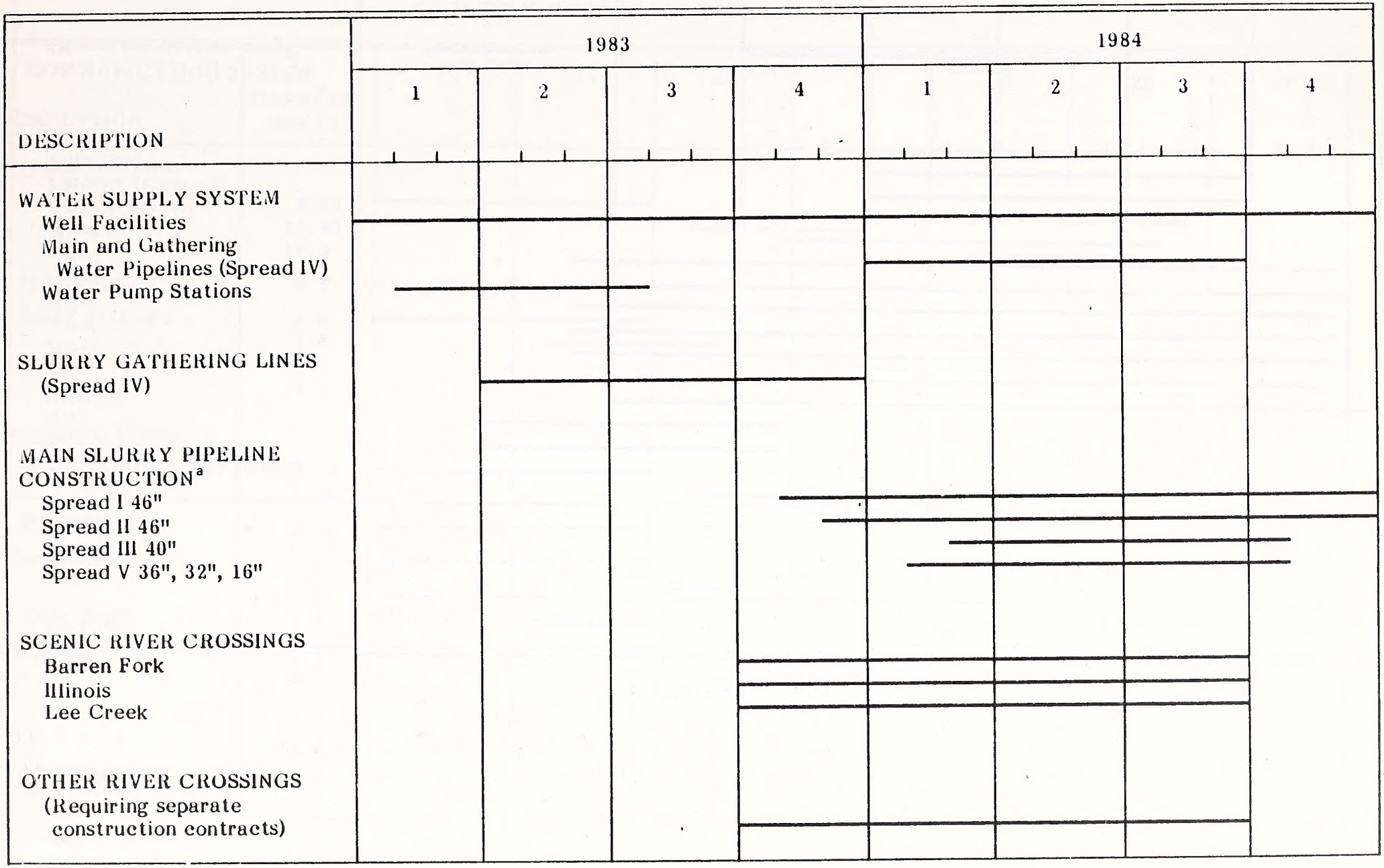
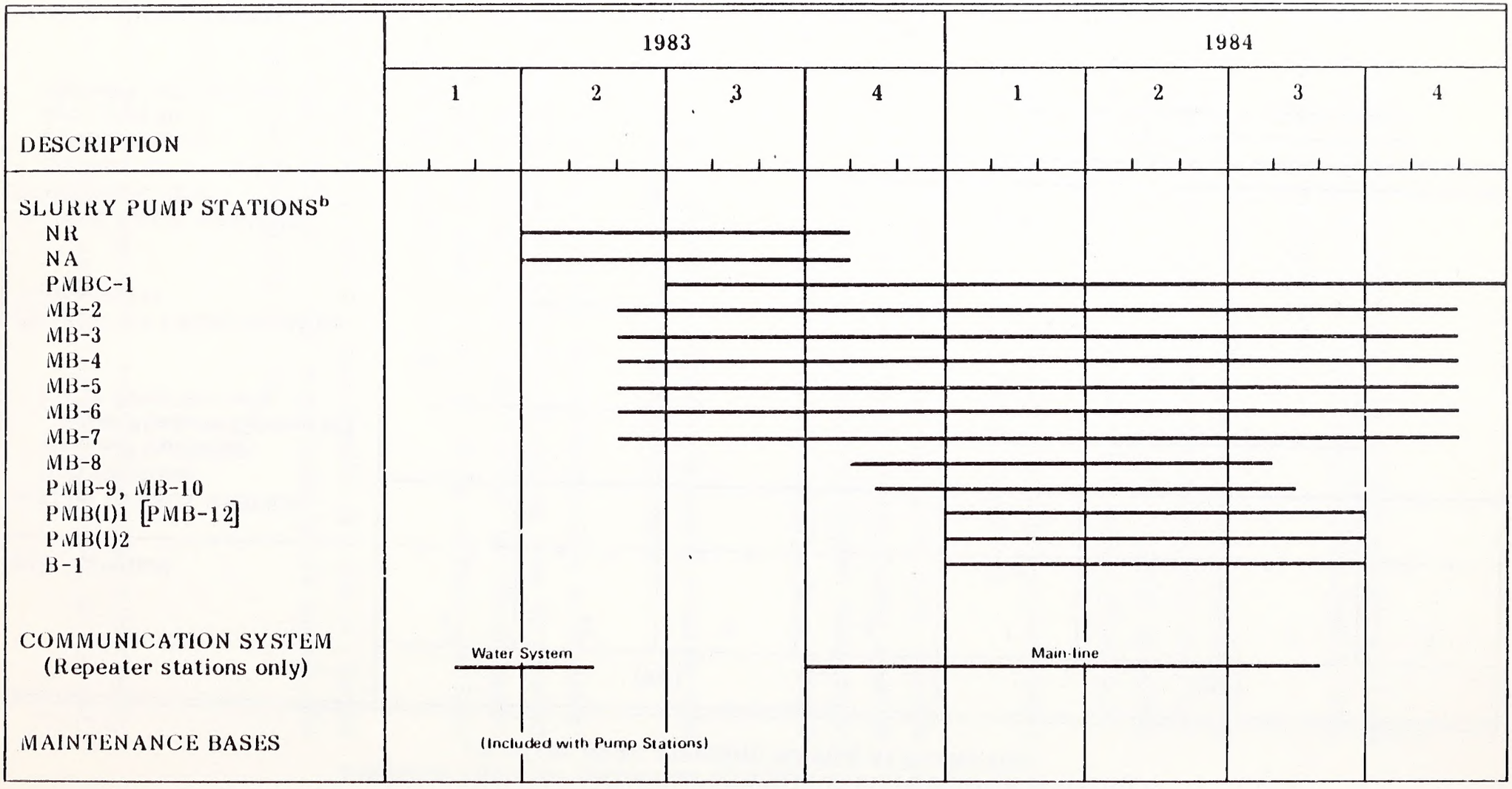


FIGURE 2-5 (concluded)

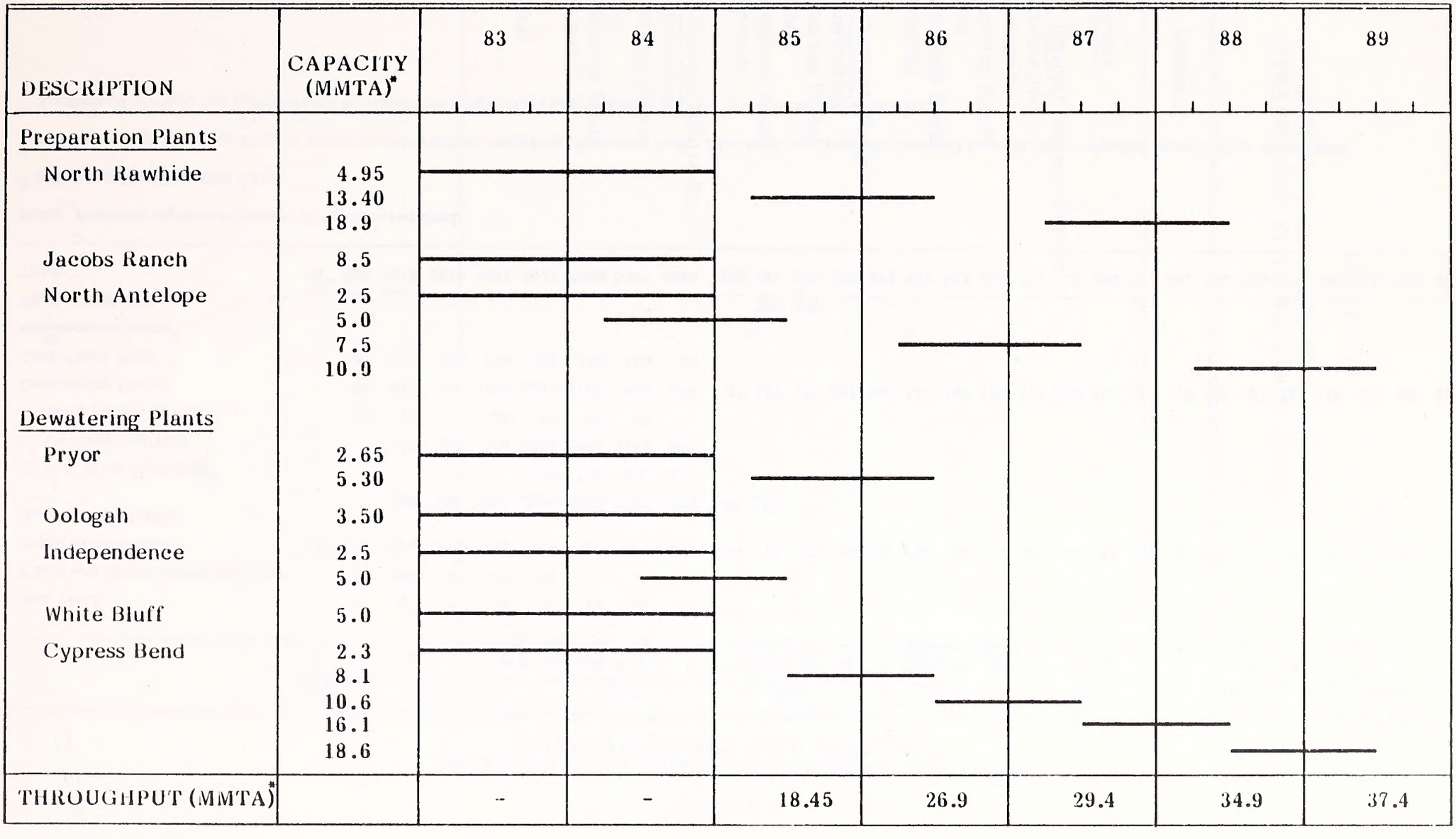


[a]See Table 1-18 for spread locations.

[b]See strip maps in Appendix A for description of symbols and locations of pump stations. There are only 15 different slurry pump station locations; pump station shown in brackets is at same location as first pump station listed in the row.

FIGURE 2-6

ASSUMED PREPARATION AND DEWATERING PLANTS CONSTRUCTION SCHEDULE:
CYPRESS BEND PIPELINE-BARGE ALTERNATIVE



* Millions of (short) tons annually

TABLE 2-9

ASSUMED QUARTERLY BUILDUP OF CONSTRUCTION WORK FORCE: CYPRESS BEND PIPELINE-BARGE ALTERNATIVE

	1982	1983				1984				1985				1986				1987				1988				1989			
	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Well Field		41	41	41	41	41	41	41	41																				
Water and Slurry Gathering Lines		60	360	360	60	90																							
Preparation Plants	31[a]	124	172	209	291	343	419	348	304	94	70	76	68	116	58	59	67	61	36	52	81	91	65	59	67	56	25	18	5
Main Slurry Pipeline			100	500	2560	2560	2560	2560	2560	300	100																		
Special River Crossings[b]						150	150	150	150																				
Slurry Pump Stations			175	452	644	1234	1300	1109	624																				
Communication System		20	20		20	20	20	20																					
Dewatering Plants		95	417	731	1102	1272	1108	839	376	92	157	197	267	266	244	190	160	110	150	190	190	190	190	190	160	110	90	60	30
Coal-Fired Plant		50	125	150	175	200	170	150	25																				
Maintenance Bases[c]																													
Testing & Startup											260	260																	
Total	31[a]	390	1410	2443	4893	5910	6028	5477	4085	486	587	533	335	382	302	249	227	171	186	242	271	281	255	249	227	166	115	78	35

Note: Numbers represent number of workers required.

[a] Initial mobilization work force.

[b] River crossings that may require separate construction contracts (Appendix D-6). Standard crossings are included in main slurry pipeline construction work force.

[c] Numbers of workers are incorporated in respective preparation and dewatering plant work force requirements.

TABLE 2-10

SUMMARY OF OPERATING PERSONNEL
CYPRESS BEND PIPELINE-BARGE ALTERNATIVE

Location	Total
Headquarters	41
Western District (Jacobs Ranch)	
Administration	4
Water Supply	11
Preparation Plants	196
Pipeline	9
Maintenance Base	23
Subtotal	243
Central District (Pryor)	
Administration	3
Dewatering Plants	57
Pipeline	24
Maintenance Base	33
Subtotal	117
Eastern District (White Bluff)	
Administration	3
Dewatering Plants	210
Pipeline	18
Maintenance Base	47
Subtotal	278
Total	679

TABLE 2-11

PIPELINE SPREAD RESPONSIBILITIES:
CYPRESS BEND PIPELINE-BARGE ALTERNATIVE

Pipeline Spread	Likely Spread Headquarters	Pipeline Segment[a]	Miles	Workers Required: Typical Spread[b]	Workers Required: Add for Rough Terrain
I	Gillette, WY Wright, WY Lusk, WY Scottsbluff, NB Ogallala, NB McCook, NB	Jacobs Ranch (PMB-0) to MB-12	390	670	78
II	Russell, KS Wichita, KS Bartlesville, OK	MB-12 to Pryor (MB-407.5)	396	670	78
III	Bartlesville, OK Fort Smith, AR Russellville, AR	Pryor to Atkins Junction (MB-407.5 to PMB-997.4)	162	610	78
IV	Gillette, WY	Jacobs Ranch to North Antelope (water)	16	260	-
		North Antelope to Jacobs Ranch (slurry)	16	390	-
		Jacobs Ranch to North Rawhide (water)	55	260	-
		North Rawhide to Jacobs Ranch (slurry)	55	390	-
		Jacobs Ranch to Well Field (water)	68	390	-
V	Russellville, AR Batesville, AR Pine Bluff, AR Dumas, AR	Atkins Junction to White Bluff (PMB-997.4 to PMB-1077.6)	80	550	65
		White Bluff to Cypress Bend (PMB-1077.6 to B-80.6)	81	550	65
		Atkins Junction to Independence (PMB(I)-0 to PMB(I)-93)	93	260	-

Notes: Spread I would proceed from south to north; spread IV would proceed as shown above; all remaining spreads would proceed from north to south.

[a] Explanation of milepost (MP) designations is included in Appendix A.

[b] Numbers represent maximum number of workers per pipeline segment.

This alternative pipeline segment could be joined in Kansas to either the proposed action, the market alternative, or the Cypress Bend pipeline-barge alternative routes.

Construction of this alternative northern pipeline segment would not change the overall construction schedule for any of the routes to which it could be joined. Nor would it change any of the construction workforce or operating personnel requirements. Table 2-12 lists the likely construction spread headquarters for this route.

COAL-CLEANING OPERATION ALTERNATIVE

Because it may be beneficial to clean the coal prior to shipping (depending upon final contractual arrangements with the power plants), ETSI requested that the coal-cleaning process be considered as a system-design option in the EIS. To accomplish this alternative, coal-cleaning plants would be constructed as integral components of the Jacobs Ranch, North Rawhide, and North Antelope preparation plants. All waste from the plant would be dewatered and trucked back to the mine sites for disposal.

The coal-cleaning plants would be constructed in phases between 1983 and 1989, at the same time as the phased slurry preparation plants. Construction of the coal-cleaning facilities would increase the work force for the slurry preparation plants by one-fourth. The operating staff for the combined facilities also would be one-fourth more than for the preparation plants alone. Thus the total number of operations personnel required would be 245.

CROOK COUNTY ALTERNATIVE WATER SUPPLY SYSTEM

Under the Crook County water supply system alternative, the main water source for the coal slurry transportation project would be a well field drilled into the Madison Formation northeast of Gillette in Crook County, Wyoming, as shown on Map 2-3.

Some aspects of the Crook County alternative water supply system would be the same as those described for the Niobrara well field, particularly the

TABLE 2-12

LIKELY PIPELINE CONSTRUCTION SPREAD HEADQUARTERS:
COLORADO ALTERNATIVE

Community	County	State
Gillette	Campbell	Wyoming
Wright	Campbell	Wyoming
Lusk	Niobrara	Wyoming
Cheyenne	Laramie	Wyoming
Sterling	Logan	Colorado
Colby	Thomas	Kansas
Hays	Ellis	Kansas
Wichita	Sedgwick	Kansas

construction and operating procedures. Due to greater flow rates from wells only half the number of construction and operation personnel would be required. Thus only about 20 construction workers would be required.

Because of the more northerly location of the Crook County well field, the distribution system for the well-field water would differ from that of the Niobrara well field. The Crook County well-field pump station would pump water through 47 miles of buried, 26-inch O.D. main water pipeline to a distribution head tank at the North Rawhide preparation plant. The tank would supply the preparation plant at North Rawhide and the water pipeline to the Jacobs Ranch distribution head tank. Similarly, this tank would supply the Jacobs Ranch preparation plant and the water pipeline to North Antelope.

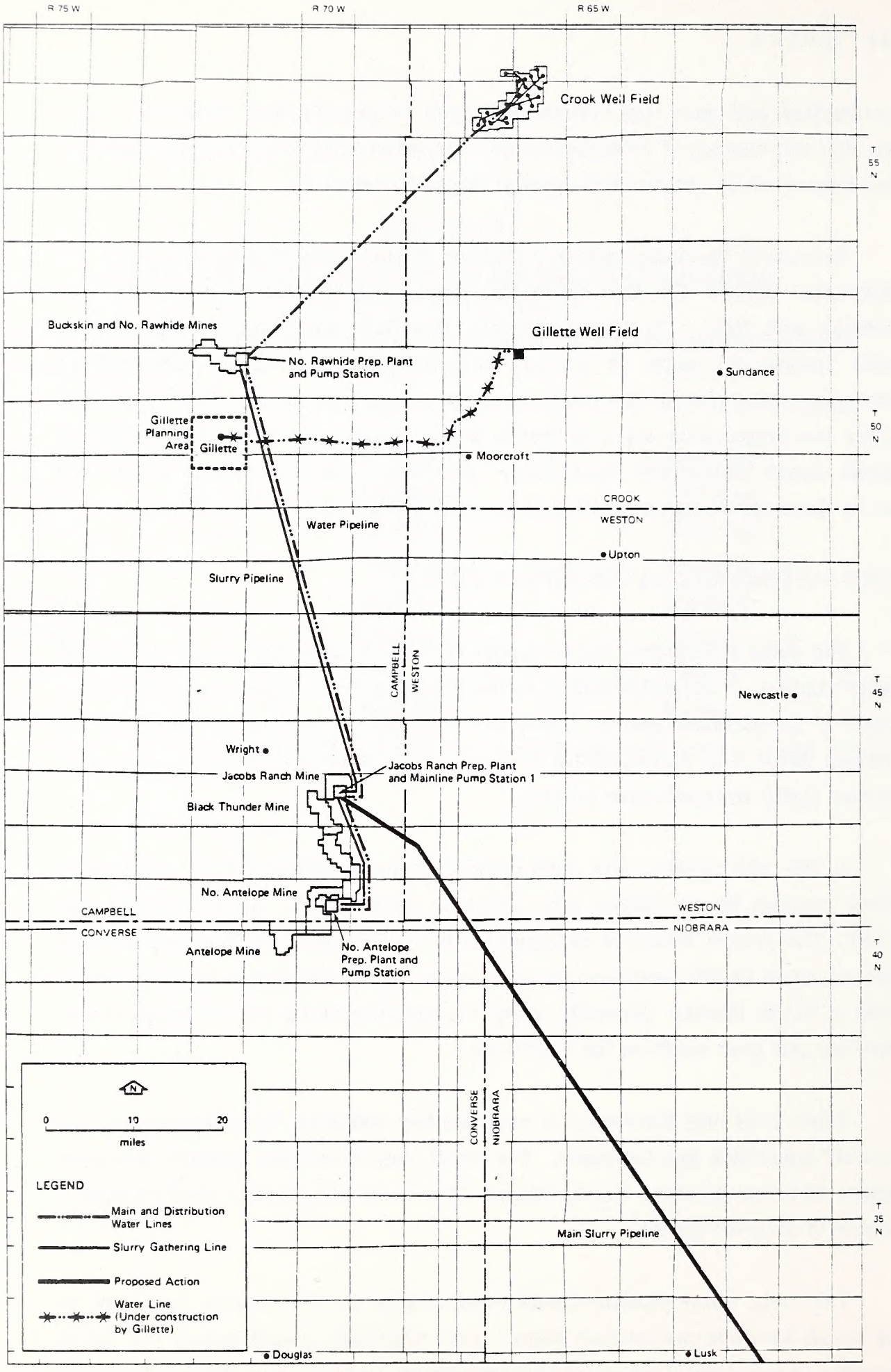
OAHE ALTERNATIVE WATER SUPPLY SYSTEM

The Oahe alternative water supply system is considered to be a decision maker's option. It is an alternative to the Niobrara well field, the primary water source of the proposed action. Under this alternative, the Oahe Reservoir on the Missouri River near Pierre, South Dakota, would be the major water source for the coal slurry transportation project.

A 276-mile pipeline with eight pump stations, would have to be constructed across western South Dakota into Wyoming (Appendix A, Maps A-55 through A-59). The system would be designed for a throughput of 30,200 acre-feet per year, of which 10,000 acre-feet per year would be for designated urban and rural areas in South Dakota, generally along the pipeline route, and of which 20,200 acre-feet per year would be for ETSI's use.

Table 2-13 lists the names of communities and areas to be served, and the drop-off quantities and locations. For small quantities, the pipeline would be tapped directly; in other cases, lateral lines from the pipeline would supply a number of drop-off points.

The main water pipeline would terminate at the distribution head tank at the North Rawhide preparation plant. This head tank would supply the North Rawhide preparation plant and the water pipeline to the Jacobs Ranch head tank.



Map 2-3. CROOK COUNTY ALTERNATIVE WATER SUPPLY SYSTEM

TABLE 2-13

DISTRIBUTION OF WATER FROM
OAHE ALTERNATIVE WATER SUPPLY SYSTEM

Distribution Points			Towns/Facilities Served	
Milepost	Pump Station Location	Water Distributed (ac-ft/yr)	Location	Water Delivered (ac-ft/yr)
O-0		30,200	Receive from Oahe Reservoir	
O-20	Cheyenne	1,378	Cheyenne (rural)	1378.0
O-96	Philip	2,247.2	Philip	134.0
			Wall	239.9
			Wasta	22.0
			Cedar (rural)	35.0
			Kadoka	135.8
			Belvedere	11.0
			Okaton	6.0
			Murdo	66.3
			White River	157.0
			Draper	20.3
			Lyman-Jones (rural)	1153.0
			Vivian	29.2
			Presho	116.0
			Kennebec	80.5
			Reliance	41.2
O-138	New Underwood	452.8	New Underwood	21.8
			Box Elder	280.0
			Hermosa	45.0
			Hermosa (rural)	106.0
O-163	Alkali	1,226.0	Alkali (rural)	22.0
			Sturgis	1204.0
O-174	Whitewood	303.0	Whitewood	269.0
			Butte-Meade (rural)	34.0
O-196	Belle Fourche	4,393.0	Belle Fourche	1518.0
			Unaccounted	2875.0
O-287	North Rawhide	20,200.0	North Rawhide preparation plant	

Similarly, the Jacobs Ranch tank would supply the Jacobs Ranch preparation plant and the water pipeline to North Antelope. If needed, the Gillette reserve water supply would be used, as described earlier in this chapter.

Construction of the proposed water supply system would take two years, from January 1983 through December 1984. A single spread of approximately 260 workers would lay the pipe. A crew of 30 workers would require approximately three months to construct each of the eight pump stations. The communities likely to be construction spread headquarters are Pierre and Rapid City, South Dakota, and Gillette, Wyoming.

A staff of 12 would be required to operate and maintain the water supply system. The pump stations would be operated automatically.

TABLE 2-14

COMPARISON OF PROPOSED ACTION AND ALTERNATIVES

	Proposed Action	Market Alternative	Cypress Bend Pipeline-Barge Alternative	No-Action Alternative[a]
Water Requirements				
Construction (total)	4,297 ac-ft	4,297 ac-ft	4,297 ac-ft	0 ac-ft
Operation				
Well Field	20,200 ac-ft/yr	20,200 ac-ft/yr	20,200 ac-ft/yr	NA
Pump Stations				
Wyoming	60 ac-ft/yr	60 ac-ft/yr	60 ac-ft/yr	NA
Colorado	NA	NA	NA	NA
Nebraska	85 ac-ft/yr	40 ac-ft/yr	40 ac-ft/yr	NA
Kansas	105 ac-ft/yr	120 ac-ft/yr	120 ac-ft/yr	NA
Oklahoma	50 ac-ft/yr	50 ac-ft/yr	50 ac-ft/yr	NA
Total Operation	20,500 ac-ft/yr	20,470 ac-ft/yr	20,470 ac-ft/yr	NA
Land Requirements				
Construction	22,730 ac	22,199 ac	17,097 ac	0 ac
Operation of Surface Facilities	853 ac	843 ac	818 ac	no new acres required
New Right-of-Way Required	1,828 mi	1,785 mi	1,366 mi	no new miles required
Land Ownership/Management of Right-of-Way				
Bureau of Land Management	6 mi	6 mi	6 mi	0 mi
Forest Service	27 mi	27 mi	27 mi	0 mi
Indian	18 mi	18 mi	18 mi	0 mi
State	68 mi	68 mi	58 mi	0 mi
Private	1,709 mi	1,666 mi	1,257 mi	all miles
Work Force Requirements				
Construction (total)	38,847 worker-quarters[b]	38,940 worker-quarters[b]	36,054 worker-quarters[b]	0 worker-quarters[b]
Operation				
Headquarters	41 workers	41 workers	41 workers	NA
Western District	243 workers	243 workers	243 workers	NA
Central District	124 workers	117 workers	117 workers	NA
Eastern District	178 workers	141 workers	278 workers	NA
Southern District	164 workers	211 workers	NA	NA
Total	753 workers	753 workers	679 workers	2,470 workers (1,290 workers)
Water Distribution[c] and Slurry Gathering Pipelines[d]	71 mi	71 mi	71 mi	NA
Main Water Pipeline[c]	68 mi	68 mi	68 mi	NA
Main Slurry Pipeline	1,664 mi	1,621 mi	1,202 mi	NA
River Crossings Requiring Federal Permits	58	54	35	NA
Preparation Plants	3	3	3	NA
Slurry Pump Stations	23	22	15	NA
Dewatering Plants	9	9	5	NA
Length of Time to Deliver Coal[e]	17 days	17 days	17.5 days	5 days (8.5 days)

TABLE 2-14 Continued

	Colorado Alternative[f]	Proposed Action[f]	Colorado Alternative[f]	Market and/or Pipeline-Barge Alternative[f]	Coal Cleaning Operation Alternative
Water Requirements					
Construction (total)	*		*		+ 0 ac-ft
Operation					
Well Field	NA		NA		+ 300 ac-ft/yr
Pump Stations					
Wyoming	60 ac-ft/yr	60 ac-ft/yr	60 ac-ft/yr	60 ac-ft/yr	NA
Colorado	90 ac-ft/yr	NA	90 ac-ft/yr	NA	NA
Nebraska	NA	85 ac-ft/yr	NA	40 ac-ft/yr	NA
Kansas	70 ac-ft/yr	55 ac-ft/yr	70 ac-ft/yr	80 ac-ft/yr	NA
Oklahoma	NA	NA	NA	NA	NA
Total Operation	220 ac-ft/yr	200 ac-ft/yr	220 ac-ft/yr	180 ac-ft/yr	+ 300 ac-ft/yr
Land Requirements					
Construction	6,440 ac	6,028 ac	7,446 ac	6,931 ac	+ 0 ac
Operation of Surface Facilities	*		*		+ 0 ac
New Right-of-Way Required	519 mi	485 mi	602 mi	560 mi	NA
Land Ownership/Management of Right-of-Way					
Bureau of Land Management	3 mi	2 mi	3 mi	2 mi	NA
Forest Service	30 mi	14 mi	30 mi	14 mi	NA
Indian	0 mi	0 mi	0 mi	0 mi	NA
State	21 mi	33 mi	21 mi	33 mi	NA
Private	465 mi	436 mi	548 mi	511 mi	NA
Work Force Requirements					
Construction (total)	*		*		+ 4,218 worker-quarters[b]
Operation					
Headquarters	NA		NA		NA
Western District	*		*		+ 49 workers
Central District	NA		NA		NA
Eastern District	NA		NA		NA
Southern District	NA		NA		NA
Total	NA		NA		+ 49 workers
Water Distribution[c] and Slurry Gathering Pipelines[d]	NA		NA		NA
Main Water Pipeline[c]	NA		NA		NA
Main Slurry Pipeline	519 mi	485 mi	602 mi	560 mi	NA
River Crossings Requiring Federal Permits	2	3	2	4	NA
Preparation Plants	NA		NA		NA
Slurry Pump Stations	*		*		NA
Dewatering Plants	NA		NA		NA
Length of Time to Deliver Coal[e]	NA		NA		NA

TABLE 2-14 Concluded

	Crook County Alternative Water Supply System[g]	Oahe Alternative Water Supply System[g]	Slurry Pipeline Water Discharge Alternative[g]
Water Requirements			
Construction (total)	+ 0 ac-ft	+ 0 ac-ft	+ 0 ac-ft
Operation			
Well Field	+ 0 ac-ft/yr	+ 0 ac-ft/yr	+ 0 ac-ft
Pump Stations			
Wyoming	NA	+ 0 ac-ft/yr	+ 0 ac-ft/yr
Colorado	NA	+ 0 ac-ft/yr	+ 0 ac-ft/yr
Nebraska	NA	+ 0 ac-ft/yr	+ 0 ac-ft/yr
Kansas	NA	+ 0 ac-ft/yr	+ 0 ac-ft/yr
Oklahoma	NA	+ 0 ac-ft/yr	+ 0 ac-ft/yr
Total Operation	+ 0 ac-ft/yr	+0 ac-ft/yr	+ 0 ac-ft/yr
Land Requirements			
Construction	- 558 ac	+ 2,025 ac	variable
Operation of Surface Facilities	- 15 ac	- 20 ac	+ 0 ac
New Right-of-Way Required	- 25 mi	+ 208 mi	variable
Land Ownership/Management of Right-of-Way			
Bureau of Land Management	+ 0 mi	+ 0 mi	+ 0 mi
Forest Service	+ 0 mi	+ 0 mi	+ 0 mi
Indian	+ 0 mi	+ 0 mi	+ 0 mi
State	+ 0 mi	+ 0 mi	+ 0 mi
Private	-21 mi	+ 208 mi	variable
Work Force Requirements			
Construction (total)	- 164 worker-quarters[b]	+ 932 worker-quarters[b]	unknown
Operation			
Headquarters	NA	+ 0 workers	+ 0 workers
Western District	+ 0 workers	+ 1 worker	+ 0 workers
Central District	NA	+ 0 workers	unknown
Eastern District	NA	+ 0 workers	unknown
Southern District	NA	+ 0 workers	unknown
Total	+ 0 workers	+ 1 worker	unknown
Water Distribution[c] and Slurry Gathering Pipelines[d]	NA	NA	NA
Main Water Pipeline[c]	- 25 mi	+ 208 mi	NA
Main Slurry Pipeline	NA	NA	NA
River Crossings Requiring Federal Permits	+ 0	+ 0	+ 1 per site
Preparation Plants	NA	NA	NA
Slurry Pump Stations	NA	NA	NA
Dewatering Plants	NA	NA	NA
Length of Time to Deliver Coal[e]	NA	NA	NA

[a] Figures given apply to both all-rail and railroad-barge alternatives; exceptions for railroad-barge are included in parentheses.
[b] Worker-quarter is a measure of the amount of work done by 1 worker in a quarter of a year.
[c] Main water and water distribution pipelines would be adjacent to slurry pipelines except for about 31 miles.
[d] Both pipelines would lie within the same right-of-way.
[e] Represents length of time to transport coal to most distant terminal.
[f] Comparison pertains only to main slurry pipeline route(s) between Jacobs Ranch and intersection point(s) in Kansas.
[g] Numbers represent change from proposed action.
* Amount is approximately the same.
NA = Not applicable.

Chapter 3
METHODS

INTRODUCTION

The purpose of the analysis is to identify the distribution and extent of social and economic impacts associated with the proposed action and alternatives. Generally, social and economic impacts stem from the dynamic interaction between project-related characteristics and ongoing processes in potentially affected areas. The project-related characteristics are composed of manpower requirements and associated income, and the dollar value of project facilities. The ongoing processes are the public and private capacities to accommodate project-related population influx and work force characteristics.

The task of assessing a project's social and economic effects essentially involves using appropriate baseline information to make value judgments about the kind, degree, intensity, and duration of impacts. Broadly, impact assessment is an appraisal of short- and long-range consequences of technological inducements to changes in surrounding human communities. The interpretation of the National Environmental Policy Act (NEPA) and of related documents lead to the following general outline of the method followed for this analysis:

- Identification of those proposed action and alternative components that are relevant to social and economic impact analysis
- Determination of areas potentially affected
- Projection of community model "without" the project over the project period

- Assessment of net community changes "with" or due to the project over the same period in a comparison of alternative versions

- Projection of possible impacts over a selected time period

- Suggestion of mitigative measures to reduce or prevent significant adverse impacts

IDENTIFICATION OF AREAS POTENTIALLY AFFECTED

The first step of the analysis was to identify areas (regions, counties, communities) with a potential for being affected by the proposed action and alternatives. To accomplish this, the project description first had to be examined for reasonable estimates of the following elements (these elements guided the analysis of potential socioeconomic impacts):

- Project component locations

- Construction and operation schedules and modes

- Employment requirements over time

- Dollar value of proposed properties

These estimates represent the original source of project effects (e.g., influx of nonlocal workers and their families) and impacts (e.g., housing shortage). Once these estimates were reviewed, it was then possible to generate a framework for identifying areas potentially affected, and to conduct the analysis of impacts.

Areas potentially affected were identified by listing all counties that would have project components. This list contained population figures as an initial and general measure of jurisdictional capacity to accommodate project-related demands.

The list then was examined in an effort to categorize areas in terms of the number and level of demands associated with the construction and operation of project components in order to group, where possible, those areas that are subject to a greater variety and intensity of social and economic impacts than other areas.

Since number and level of demands are mainly a function of the duration and magnitude of population influx, certain knowledge of demand profiles was applied in the categorization procedure. Demands associated with pipeline construction are substantially different from those associated with the preparation plants and dewatering plants.

IMPACT TOPICS

Based on the locations and duration of project-related demands, impact topics were selected, and baseline information (including projections in the Wyoming area) was developed for these topics. In developing these topics, special consideration was given to the differences in pipeline construction and operation as opposed to the construction and operation of the other "fixed-site" project facilities.

Pipeline Construction and Operation

Although there is no well-documented study of actual socioeconomic impacts from pipeline construction, agency officials who have witnessed the building of such a pipeline widely agree that most aspects of the socioeconomic environment are substantially or entirely unaffected by pipeline construction. Conventional underground pipeline construction is rapid, labor-intensive, and conducted by several

work force spreads simultaneously. Consequently, the period of employment is short, and the likelihood of impacts to facilities and services in any one community is minimal. Major impact topics usually associated with pipeline construction are: increased short-term demand for temporary housing; short-term social disruption associated with increased noise, dust, and traffic congestion; and both short- and long-term beneficial fiscal impacts. Long-term fiscal benefit is associated with pipeline operation, which usually requires a very small work force for monitoring and maintenance. Short-term social disruption and fiscal effects were identified through the agency and public scoping meetings. These dictated the level of effort involved in developing the data base for existing socioeconomic conditions and the scope of the impact analysis for areas potentially affected by pipeline and pump stations only.

Terminal Facilities

Socioeconomic impacts to the people and jurisdictions involved with preparation plants, water supply system, and slurry lines in Wyoming and the dewatering plants in Oklahoma, Arkansas, and Louisiana are expected to be different from the impacts resulting from the pipeline. Considering the location of the slurry preparation plants and water system in Wyoming, and of the dewatering plants in the Midsouth, and considering the work force and schedule for the construction and operation phases of the preparation and dewatering terminal facilities, more impact topics were identified than for the pipeline jurisdictions. Additional major impact topics for these areas, especially in Wyoming, include: fiscal impact; housing availability and costs; public service capacities and capital facility requirements.

In light of this information, areas potentially affected were categorized by level of potential adverse impact. This categorization permitted the presentation of baseline data relevant to the types of

impacts expected in some places versus others. Two sets of areas were identified:

- areas potentially affected by major "fixed-site" facilities (i.e., preparation plants and dewatering plants)
- areas potentially affected by the pipeline system only (pipeline and pump stations)

These two sets of areas are shown on Figures 3-1 and 3-2. For those areas requiring the most detailed analysis (i.e., Wyoming and the dewatering plant areas in Oklahoma, Arkansas, and Louisiana), impact topics were population and employment, housing, public service adequacy, and fiscal effects. Areas where project-related impacts are expected to be relatively less significant (i.e., areas with pipeline and pump stations only) are discussed in terms of population, temporary housing availability, and long-term property tax revenue benefits.

LEVEL OF IMPACT SIGNIFICANCE

Once the affected area and the means for assessing potential impacts were defined, a determination was made as to the significance of the impacts. The difficulty of setting quantitative definitions of significance was recognized--a difficulty due to such considerations as original population size, existing capacity of the infrastructure, recent history of community growth, and existing unemployment. For example, it would generally be agreed that an increase of 1000 new-to-the-area workers in a town of 10,000 would have a more severe impact than would the increase of 1000 in a town of 100,000. However, it cannot be concluded a priori that in the second case even a 1 percent change is without its impacts.

One measure that appears to be a good predictor of the severity of impacts is the community rate of growth (HUD 1976). More specifically, the Denver Research Institute has suggested that "An annual growth rate of ten percent strains local service capabilities. Above fifteen percent seems to cause breakdowns in local and regional institutions" (DRI 1974). The following analysis used these measures as but one guide to determine significance in a multidimensional problem.

The definition of a "minor impact" is illustrated by the following:

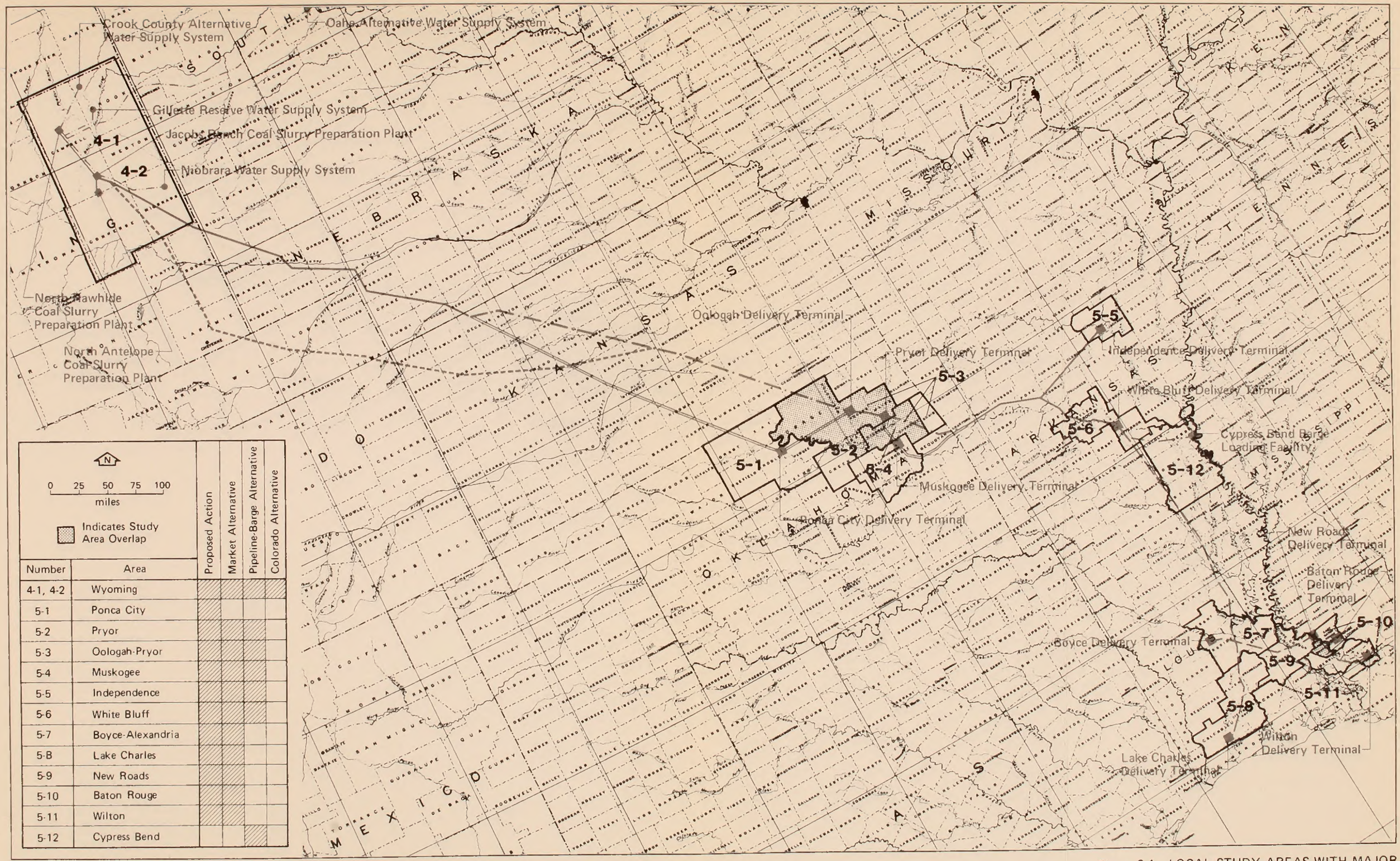
- Is of relatively short duration
- Would generate no addition to public service capabilities, (e.g., new school or new hospital)
- Would generate no permanent shortages or continued diminution of services

A "major, significant" impact, on the other hand, was generally:

- Of a more lasting nature, generating such changes as an altered economic structure or requiring an expansion of community facilities
- Such that, if not mitigated or planned for, would lead to a general decline in the community quality of life

PRESENTATION OF ANALYSIS

The following sections present the results of the analysis of potentially affected areas. This presentation documents and summarizes the detailed 11-step procedure that was followed for each



Number	Area	Proposed Action	Market Alternative	Pipeline-Barge Alternative	Colorado Alternative
4-1, 4-2	Wyoming	▨	▨	▨	▨
5-1	Ponca City	▨			
5-2	Pryor	▨	▨	▨	
5-3	Oologah-Pryor	▨	▨	▨	
5-4	Muskogee	▨	▨	▨	
5-5	Independence	▨	▨	▨	
5-6	White Bluff	▨	▨	▨	
5-7	Boyce-Alexandria	▨			
5-8	Lake Charles	▨			
5-9	New Roads	▨			
5-10	Baton Rouge	▨			
5-11	Wilton	▨			
5-12	Cypress Bend			▨	

Figure 3-1. LOCAL STUDY AREAS WITH MAJOR FACILITIES (Preparation Plants and Dewatering Plants)

Crook County Alternative Water Supply System

Oahe Alternative Water Supply System

Gillette Reserve Water Supply System

Jacobs Ranch Coal Slurry Preparation Plant

Niobrara Water Supply System

North Rawhide Coal Slurry Preparation Plant

North Antelope Coal Slurry Preparation Plant

19CA

20CA

21CA

4MA

4PA

5MA

5PA

Oologah Delivery Terminal

Pryor Delivery Terminal

Independence Delivery Terminal

White Bluff Delivery Terminal

Cypress Bend Barge Loading Facility

Muskogee Delivery Terminal

Ponca City Delivery Terminal

New Roads Delivery Terminal

Baton Rouge Delivery Terminal

Boyce Delivery Terminal

Wilton Delivery Terminal

Lake Charles Delivery Terminal

8

9

12

13

N

0 25 50 75 100

miles

Indicates Study Area Overlap

Number	Area	Proposed Action	Market Alternative	Pipeline-Barge Alternative	Colorado Alternative
2	Northwest Nebraska	▨	▨	▨	
3	Southwest Nebraska	▨	▨	▨	
4PA	North Kansas	▨	▨	▨	▨
4MA	North Kansas	▨	▨	▨	▨
5PA	South Kansas	▨	▨		
5MA	South Kansas	▨	▨		
8	Northwest Arkansas	▨	▨	▨	
9	North Central Arkansas	▨	▨	▨	
12	South Arkansas	▨	▨		
13	North Louisiana	▨	▨		
19CA	Southeast Wyoming				▨
20CA	Northeast Colorado				▨
21CA	West Kansas				▨

Figure 3-2. LOCAL STUDY AREAS WITH PIPELINE AND PUMP STATIONS ONLY

area. For reference, these 11 steps are:

- Determine the spatial distribution of project components.
- Determine the spatial distribution of the work effort required to construct the project. Identify areas of aggregate work force demand.
- Define the surrounding economic region within which there is likely to be a significant aggregate work force demand.
- Review the magnitude and timing of aggregate work force demand due to project implementation and the cumulative regional labor demand due to the sum of all projects in the region to be undertaken in the same time frame.
- Compare cumulative regional labor demand with projected available labor force residing in the region.
- Determine the magnitude of work force to be hired from outside the local area necessary to construct the project. If peak work force is a small percentage of the contract construction sector of the regional labor force, conclude there is no source of impacts, document for project files, and exclude from further study.
- If the regional construction labor pool is inadequate to cover the need for workers on the project and if magnitude of nonlocal work force would cause an in-migration, determine the likely distribution of the in-migrant construction workers and their families to communities within the previously defined economic region. Allocation procedure considers community size and distance from project site.

- For those communities identified as being likely to receive significant increases in population during the construction phase, determine the demand for housing by type, and assess the ability of the housing market to provide increased housing. Consider also ability to absorb increased demands on public service and capital facilities.

- Similarly, for communities likely to experience permanent increases in population during the operation phase, assess capacities of housing market and public services in terms of their ability to serve additional population.

- For those public services determined to be overstressed, assess the balance and timing of costs incurred by project-related demands for increased services versus the increased revenues to be derived from the project.

- Where impacts on projected baseline conditions are likely to be significant, propose measures to avoid or correct the impacts.

The potentially affected areas are discussed in order of potential project-related impact, starting with the four-county area in Wyoming, followed by the various dewatering plant sites, and lastly, the areas where only pipeline and pump stations will be located.

CHAPTER FOUR
PREPARATION PLANTS AND WATER SYPPLY SYSTEM
AFFECTED AREA: WYOMING

INTRODUCTION

The purpose of this study is to analyze the potential socioeconomic effects (in terms of population, housing, and public services) that might result from the construction and operation of the ETSI pipeline, as well as the cumulative effects generated by total energy developments. Direct and induced effects are identified for a total of seven different alternatives: (1) the proposed action alternative; (2) the market alternative; (3) the pipeline-barge alternative; (4-6) for each of the three principal alternatives, there is a base condition and a coal-cleaning condition; and (7) there is an option of moving the well field from Niobrara County to Crook County.

The remainder of this chapter is arranged as follows:

- Existing and projected baseline (excluding ETSI) for each county by employment and population, housing, and public services
- ETSI-associated construction effects (proposed alternative)
- ETSI-associated operation effects
- Cumulative effects
- Effects of the alternatives (market, barge, coal-cleaning, and Crook County well field)

PROJECT COMPONENTS FOR PROPOSED ACTION IN WYOMING

Under the proposed action, the ETSI coal slurry pipeline would require several major facilities for preparing, gathering, and transporting low-sulfur coal from the South Powder River Basin coal fields in eastern Wyoming to markets in Oklahoma, Louisiana, and Arkansas. The specific projects associated with the proposed action include:

- Three coal slurry preparation plants: North Rawhide mine (10 miles north of Gillette); Jacobs Ranch mine (10 miles east of Wright); and North Antelope mine (25 miles southeast of Wright)
- Two main slurry gathering lines going from the North Rawhide and North Antelope preparation plants to the main collector at the Jacobs Ranch mine
- A major water pump station in Niobrara County
- A series of water supply lines from the Niobrara well field to the preparation plants
- The northernmost 100 miles of the main slurry pipeline (Figure 4-1)

BASELINE SOCIOECONOMIC CONDITIONS

The project components would be located in four Wyoming counties: Campbell, Converse, Weston, and Niobrara (Frame 4-1). In order to assess the potential socioeconomic effects of the construction and operation of these facilities, the baseline social and economic conditions for each county and affected community are described, both for the present and the near future. (A projection of the cumulative effects of other energy-related operations also is included.)

Campbell County: Economy and Population

In the 1940s and 1950s, the economy of Campbell County relied heavily on ranching and some minor agricultural production. Between 1950 and 1960, population increased at a moderate rate—from 4800 to 5800. In the 1960s, however, the surge in oil exploration and extraction brought about a sudden shift in the rate of economic growth and created the county's first "energy boom." By 1970, the population had more than doubled to 13,000 people.

Coal mining emerged as a mainstay in the county's economy following the OPEC oil embargo. Mining employment increased significantly in Campbell County between 1970 and 1975—from 1108 to 1402 (Table 4-1). Since 1974, 12 mines have been permitted to operate on federal leases (Figure 4-2). There has been a significant increase in the construction, business, and consumer services, and government and education employment levels associated with the mining

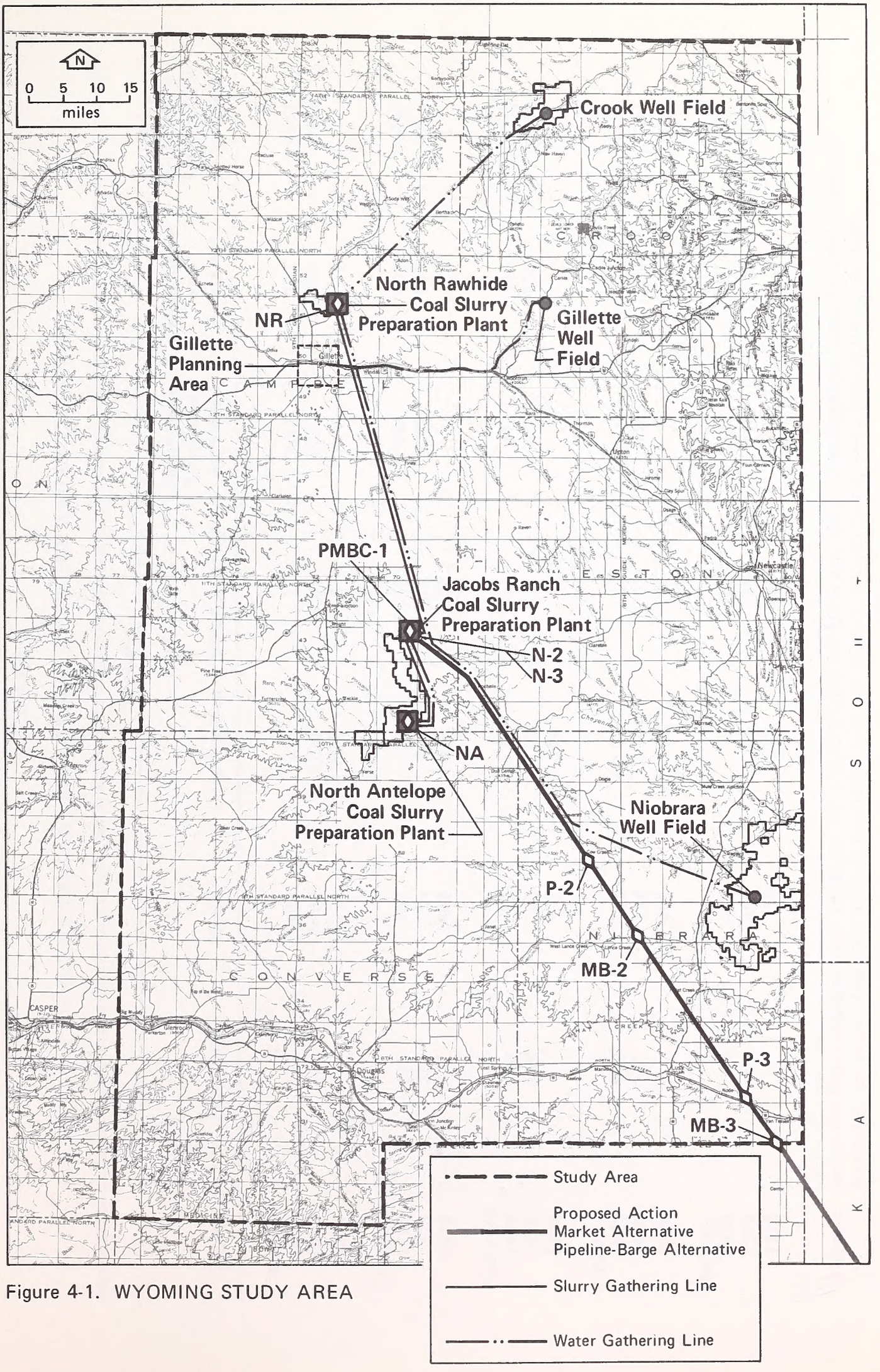


Figure 4-1. WYOMING STUDY AREA

TABLE 4-1

WAGE AND SALARY EMPLOYMENT BY SECTOR AND BY COUNTY

County	Sector						Total Wage and Salary Employment (persons)
	Agriculture	Mining	Construction	Manufacturing	Business & Consumer Services	Government and Education	
Campbell							
1970	157	1108	473	27	2157	772	4694
1975	188	1402	1031	84	2733	966	6404
1978		3028	2015	141			
Converse							
1970	198	155	177	19	848	491	1888
1975	239	654	286	42	1332	555	3108
1978		1468	465	66			
Niobrara							
1970	96	78	56	33	442	203	908
1975	116	89	23	31	425	210	894
1978		137	137	42			
Crook							
1970	130	135	64	120	351	367	1167
1975	157	190	127	133	416	388	1411
1978		356	163	174			
Weston							
1970	78	439	26	102	924	491	2060
1975	93	484	63	250	953	510	2353
1978		566	212	204			

Sources: Bureau of Land Management 1979, pp. R2-116, R2-117, for 1970 and 1975. Employment Security Commission of Wyoming, undated. Data for 1978 is available only for mining, construction, and manufacturing sectors.

*Includes both mining and construction employment.

development. In Campbell County, 1978 construction employment was more than double its 1970 base level. Since 1972, unemployment levels in Campbell County have remained lower than 3.5 percent (Wyoming Employment Security Commission 1980a, 1980b). The labor force peaks during the summer and declines during the winter. Unemployment varies more sporadically throughout the year.

Gillette/Gillette Planning Area. The two communities in Campbell County that have been most affected by energy developments are Gillette (because of its location and available services) and Wright (because of its location). The other communities in Campbell County, such as Rozet, have not been significantly affected. The City of Gillette, which had a population of 13,800 in 1979, accounted for half the county's population (Table 4-2). Four operating coal mines (Wyodak, East Gillette, Rawhide, and Eagle Butte) are within 20 miles of the city. Gillette is the county seat and the center of the county's economic activity, including commercial and retail services. The city's economy generally resembles the county's in its heavy dependence on energy development.

The Gillette Planning Area (GPA) encompasses a 5- by 6-mile area that includes the city of Gillette. The GPA is considered rather than Gillette alone because an increasing number of residential settlements that currently are or will be located just outside the city limits eventually will require services from Gillette. In addition, Gillette has been annexing properties adjacent to its boundaries, both to provide these outlying communities with municipal services and to include commercial and industrial properties into its tax base. Since the city probably will continue this practice over the next few years, the city limits will be extended toward the GPA boundaries. The most recent city/county survey estimates the GPA's population at 18,600, which is roughly 70 percent of the county's population base (Table 4-2).

Housing. In June 1979, the Gillette/Campbell County Department of Planning and Development estimated the total number of housing units in the city and county (Table 4-3). Mobile homes constitute a substantial portion of the housing supply, particularly in the rural sections of the county. In fact, they are the principal source of housing in the planning area outside Gillette and in the

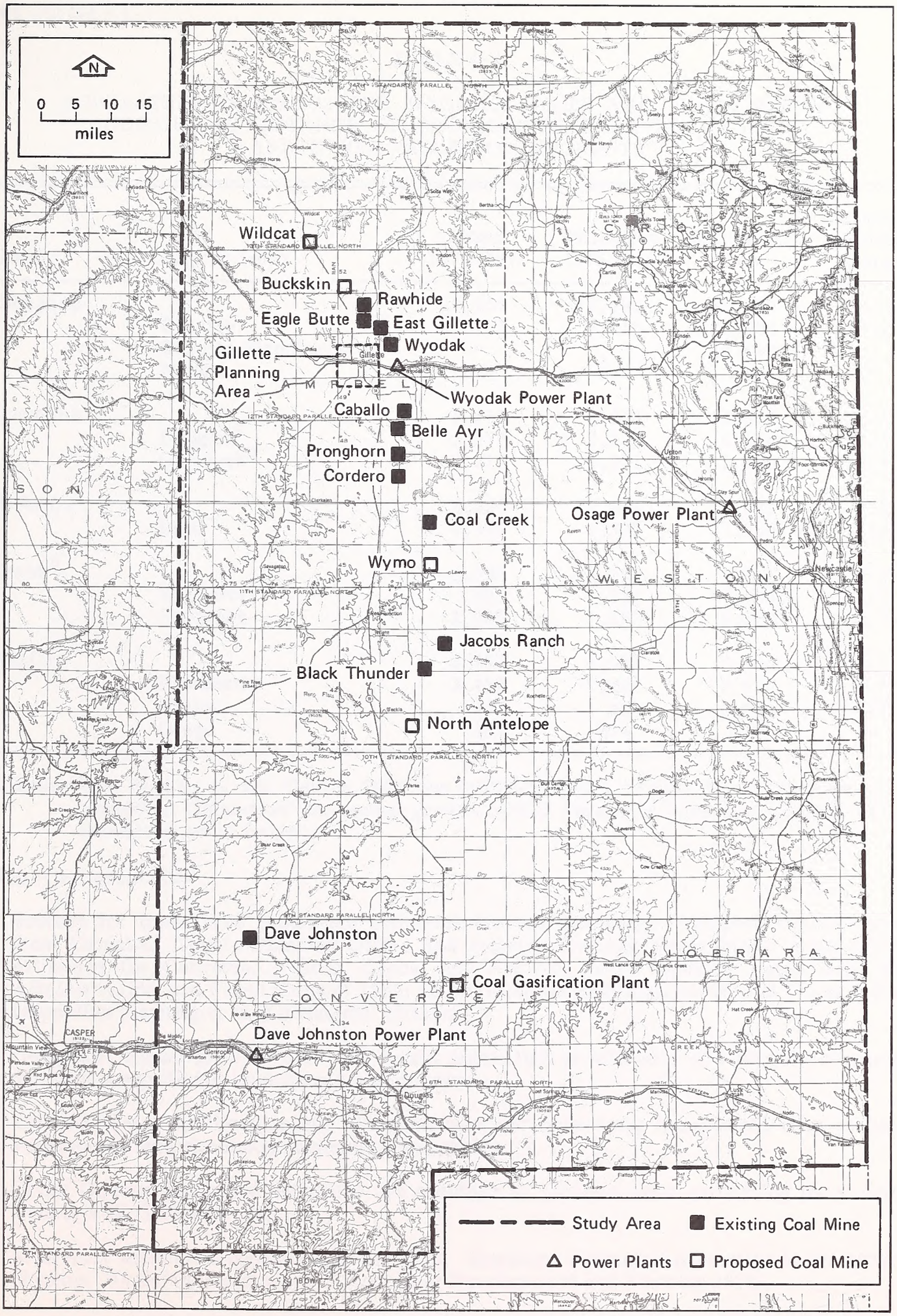


Figure 4-2. EXISTING AND PROPOSED COAL MINES AND POWER PLANTS IN WYOMING

Source: Wyoming Highway Department, Planning Division, 1978

TABLE 4-2

POPULATION STATISTICS FOR WYOMING CITIES AND TOWNS WITHIN COMMUTING DISTANCE OF PROPOSED PREPARATION PLANTS AND OTHER PROJECT COMPONENTS

County	City or Town	Census 1970 Pop.	Estimated 1975 Pop.	Estimated[a] Pop.	Annual[b] Growth Rate
Campbell		12,957	13,090	26,600	19.4
	Gillette	7,763	8,215	13,800	13.9
	Gillette Planning Area			18,600	
	Wright	N/A	N/A	825	--
Converse		5,938	8,048	13,400	13.6
	Douglas[c]	2,677	3,839	8,500[b]	22.0
	Glenrock[c]	1,515	2,071	2,900	8.8
Niobrara		2,924	2,895	3,132	2.0
	Lusk	1,495	1,628	1,750	1.8
Crook[d]		4,535	4,883	5,661	3.8
	Moorcroft	981	1,030	1,200[e]	5.2
	Sundance	1,056	1,282	2,500[e]	39.7
Weston		6,307	6,245	7,900	6.1
	Newcastle	3,432	3,421	3,900	3.3
	Upton	987	927	1,500	12.8
	Osage	350	N/A	N/A	--

Source: U.S. Bureau of the Census 1977 for 1970 and 1975. Table R2-33 "Current and Historical Population" for annual growth rate in Bureau of Land Management 1979 (except as noted below).

N/A = not applicable.

[a] Sources for these 1979 population estimates are the following: Campbell County data from Campbell County Planning Office and Gillette Planning Department; countywide estimates for Converse, Weston, Crook, and Niobrara from Wyoming Department of Administration and Fiscal Control 1980; information on individual cities and towns from respective planning or city managers' offices.

[b] Compound annual growth rate. An annual population growth rate of 5 percent or more can have a significant impact on a city or town.

[c] 1978 estimates for Douglas and Glenrock may not be strictly comparable with earlier years due to sprawl outside community boundaries.

[d] Crook County population estimates are provided as baseline when estimating the Crook County well field alternative.

[e] Moorcroft estimated population is for 1978. Sundance estimated population is for 1977. (Source: Wyoming Department of Economic Development and Planning 1979).

TABLE 4-3

ESTIMATES OF HOUSING UNITS IN CAMPBELL COUNTY
DECEMBER 1977 AND JUNE 1979

	1977	1979	Percent of Total
City of Gillette			
Single-Family	1628	2098	49
Multifamily	680	815	19
Mobile Homes	1530	1391	32
Subtotal	3838	4304	100
Gillette Planning Area			
Single-Family	2138	2646	46
Multifamily	712	883	15
Mobile Homes	2438	2190	39
Subtotal	5288	5719	100
Total Campbell County[a]			
Single-Family	2661	3452	42
Multifamily	716	895	12
Mobile Homes	3821	3681	46
Total	7198	8208	100

Source: Gillette-Campbell County Department of Planning and Development 1979.

[a] Includes Gillette Planning Area, Wright, and other rural sections of Campbell County.

rest of the county. The main reason for the decrease in mobile homes in Gillette (and throughout the county) was that these temporary units were replaced with permanent single-family structures. Such replacements also represent a shift in the market from transient construction workers to permanent workers.

Campbell County has 14 motels that frequently serve as temporary housing for many of the energy-related construction workers. A majority of these motels provide weekly commercial rates; among the occupants of these motels, a large number are workers employed by construction or mining companies. Table 4-4 identifies the temporary housing available in Gillette.

Because the demand for new housing is growing steadily, vacancy rates in the county generally are low. The Gillette/Campbell County Department of Planning and Development estimated that during 1979, vacancy rates were 3 to 4 percent for mobile homes, less than 1 percent for single-family units, and approximately 5 percent for multi-family units. During the peak season of June through September, vacancy rates for the major motels (e.g., Ramada Inn, Holiday Inn) were generally between 5 and 7 percent.

Public Services. Existing service levels and plans for near-term expansion for three major capital facilities are considered: wastewater system, water system, and public schools. The reasons for so narrow a focus are:

- Typically, these are long-term facilities that require extensive lead times for planning, financing, and construction. These facilities often require multi-source funding (joint, local, state, and federal), extensive land acquisition, and multi-phase permit applications, all of which take at least 3 to 5 years.

- In the case of water and wastewater facilities, very few temporary measures with which to meet minimum health standards are available.

- Provision of other services, including minor capital (e.g., streets) and operating functions (e.g., police, fire, administration), does not require such extensive lead times and is usually funded on an incremental and annual basis. (Assessment of these services and the potential effects of future growth are discussed in the section on fiscal effects).

TABLE 4-4

TEMPORARY HOUSING AVAILABILITY, 1980, FOR
LIKELY PIPELINE CONSTRUCTION SPREAD HEADQUARTERS

Wyoming Community	Number of Hotel/Motel Rooms	Hotel/Motel Construction	Number of Rental Units (Apartments/ Houses)	Rental Vacancy Rate	Number of Rental Units Planned or Under Construction	Number of Mobile Home Parks/Spaces	Number of R.V. Parks/ Spaces	Number of Mobile Home Spaces Vacant, Planned, or Under Construction
Gillette	560	60 units	815/NA	5%	252	1391 units	NA	471
Wright	11	40	NA	low	75	311	75	200
Douglas	260	100 units	344	4-5%	0	130	40	72 (under construction)
Glenrock	54	0	312	3%	68	250	0	180 planned 5 vacant 40 under construction
Moorcroft	63	0	30/395	5%	12 apt units	12*	0	20-25 vacant mobile home spaces (none planned or under construction)
Lusk	150	0	180/150	low	20	50	0	0
Newcastle	210	0	80 apts 90 of 1200 houses	low	0	400	20	100 planned 25 vacant

Sources: Telephone conversation with Mike Sientz, Douglas City Planner 8/12/80
Telephone conversation with John Zaborac, Glenrock City Planner 8/13/80
Telephone conversation with Ms. Pat Sewell, City Clerk, Newcastle 8/12/80
Telephone conversation with Ms. Jeannie Bruner, Sheriff's Dept., Wright 5/16/80
Telephone conversation with Ms. Carol Holdt, Town Clerk, Lusk 3/20/80
Stuart/Nichols Associates, 1978, "Impact Analysis: Gillette"
Telephone conversation with Ms. Leona Schroeder, Town Clerk, Moorcroft 3/13/80

NA = data not available.

*

Wastewater. Gillette's wastewater treatment is provided by a municipal treatment plant whose collection system extends to the boundaries of the city. This plant served over 13,800 people in early 1980. Wastewater service for the approximately 4,500 people in the GPA (outside of Gillette) is provided by various privately owned and operated facilities, ranging from simple, single septic tanks to small treatment plants. The city government is responsible for planning, building, and operating the municipal plant; the county is responsible for licensing, inspecting, and occasionally providing relief service to those in the GPA. Because of the concern that many of the facilities in the GPA are providing inadequate treatment and therefore will require a tie-in to the city's treatment plant (probably prior to annexation), there is a movement to establish a joint wastewater treatment district that would be responsible for sewage for the entire GPA.

The main problems in the wastewater collection system are infiltration, inflow, and capacity limitations along some of the interceptors. To resolve some of these problems, Gillette, which has an ongoing construction program, is also considering 15 sewer system improvement projects (combined cost: $3.8 million). However, the potential capacity problems caused by new development in the west end of Gillette have yet to be resolved (HDR 1979).

Wastewater Treatment Plant. Completed in 1974, Gillette's treatment plant is an activated sludge treatment facility designed for an average flow of 1.2 million gallons per day (gpd) of wastewater (Gillette City Engineer 1980). Design modifications have enabled the plant to serve an estimated population of 13,800, with utilization approaching 1.8 to 2.0 mgd. Nonconsumptive per capita use is estimated at 70 gpd, and expected to increase to 80 gpd (HDR 1979).

To expand treatment capacity, the county and city are submitting Step I facility plans for the GPA (including the city). Such plans are required to obtain EPA funding for construction of the treatment plant (HDR 1979; and City Engineer, City of Gillette 1980). Current plans call for treatment capacity of 4.6 million gpd, which could service a population of 42,000. HDR expects this kind of service area population by the year 2000 (HDR 1979). The estimated construction cost of all improvements is $12.6 million to $14.0 million (1979

dollars). Since the Environmental Protection Agency (EPA) will pay 75 percent of the construction cost, the local share is expected to be approximately $3.5 million. The city's annual operating and maintenance costs are expected to be between $315,000 and $400,000 (1979 dollars).

Water Supply. Gillette currently receives its drinking water from 28 wells that tap three aquifers located beneath the north and northwest sectors of the city. The entire water system is designed for 3.84 mgd and is intended to serve 15,000 people (Gillette City Engineer 1980). The water quality from all three aquifers is hard; the range is from 2000 milligrams per liter (mg/l) of total dissolved salts from the Wasatch formation to 40 mg/l from the Fox Hills formation.

To overcome existing water quality deficiencies and to meet future water supply needs, Gillette acquired the funds to begin contracting the Gillette-Madison Water Project. This water well and transmission project is scheduled for completion by May 1981 and is designed to produce a maximum of 7,000 gallons per minute, or 10.1 mgd. Approximately 1.0 million gpd have been allocated to the town of Moorcroft (0.84 mgd) and Rozet (0.14 mgd). Another 1.44 mgd has been promised to Black Hills Power and Light on an interruptible basis—that is, they can be reclaimed by Gillette when necessary. Therefore Gillette's share could be as much as 9.07 million gpd. Ultimately, Gillette's potable water supply, when combined with existing supplies, will be 12.1 mgd—enough to serve a population of 42,000 to 45,000.

The initial (1978) estimate of the cost of the Gillette-Madison Water Project was $22.5 million; currently, however, the city estimates that the cost for the entire project would be approximately 13 percent higher (about $24-$25 million) (Gillette Assistant City Administrator 1980).

Water-user fees will be used to repay the loans, but these fees are likely to overburden the water users. The city estimates that water rates would have to be nearly $15 per 1000 gallons in the early years, tapering off to approximately $1.30 per 1000 gallons by the end of the period (Gillette Assistant City Administrator 1980). By comparison, current water rates range from $0.60 to $0.80 per 1000 gallons.

Gillette is encouraging new residents of Campbell County to locate within the city limits, in order to divide the fixed cost of the Gillette-Madison Water Project (as well as the new sewage treatment plant) among more residents, thereby allowing lower water rates. However, the county is offering only limited support for the location of new developments in the city. If Gillette cannot get new residents to locate within the city limits, city residents may experience substantially higher water rates.

Public Schools. Campbell County has a single unified school district with a total of 22 schools. 1978-1979 enrollment came to 4903 students. There are 20 elementary schools, 8 of which are in Gillette. The single senior high school and junior high also are in Gillette. Many of the rural schools are one-room or mobile-home schools with small enrollments. Of the total 1979 fall elementary enrollment, 9 percent was in rural schools (Table 4-5).

School enrollment grew rapidly in the late 1960s and early 1970s, as the oil boom reached its peak. Enrollment declined briefly during academic years 1971-1972 and 1972-1973, as the petroleum drilling activity subsided. With the beginning of coal development in recent years, the county's total school enrollment has resumed its growth trend. However, the large number of construction and other temporary workers in the county has caused enrollments to fluctuate during the school year.

Currently the district has a capacity for 6541 students, including space for 3020 students in elementary schools (K-6), 1021 students in rural schools (K-8), and 2500 students in the junior and senior high schools. This overall capacity reflects the capital costs of the more than $35 million the district has incurred since 1970 (Campbell County School District No. 1 1979). Despite these major capital expenditures, as of June 30, 1979, the district's outstanding debt totaled only $10.8 million—a mere 22 percent of the district's legal debt limit. The county's rapidly rising assessed valuation has enabled the district to keep up with the intense pressures put on its system.

Wright. Wright, a rapidly growing community that was formed as recently as 1976, is located near the heart of coal mining operations in southern Campbell

TABLE 4-5

ENROLLMENT AND CAPACITY IN CAMPBELL COUNTY SCHOOL DISTRICT NO. 1 AS OF SEPTEMBER 1, 1979

Name and Classification	Peak Enrollment 1978-79	Design Enrollment Capacity 1979-80	Number of Teachers[a] 1979-80	Expected Student/Teacher Ratio 1979-80
Gillette Elementary Schools (K-6)	2509	3020	188	14.1:1
Rural Schools (K-8)	441	1021	53	12.2:1
Junior and Senior High Schools (7-12)				
Junior High School	1004	1100	69	14.5:1
Senior High School	649	1400	73	13.7:1
Total	4903	6541	383	13.8:1

Source: Campbell County School District No. 1, 1979.

[a] Includes some part-time and specialized teachers, but does not include administrators or school nurses.

County. Founded by the Atlantic Richfield Company to provide housing for ARCO mine employees and other energy-related workers in the area, it is the closest community in which to reside. It is approximately 40 miles from Gillette, 70 miles from Douglas in Converse County, and 40 miles from Newcastle in Weston County (Figure 4-1).

Because of its location and the reason for its establishment, Wright has an economy based principally on coal and other energy developments in the region. No employment estimates currently exist, but a large majority of the residents (839 in 1978) are thought to be either directly or indirectly associated with the energy industry. Ultimately, the community is planned for 1800 to 2000 units (or between 6000 and 6500 people), and is anticipated to be completed by 1985 or 1987.

Data on the planned housing supply (and the housing mix) can be found in Table 4-6. Note that nearly 44 percent of the completed units will be single-family homes, 30 percent will be multi-family homes, and about 26 percent will be mobile homes.

As Table 4-4 indicates, substantial temporary housing is available in Wright, including both motel rooms and travel trailers. Much of the land originally planned for single-family and mobile homes was made available for travel trailers, as a temporary solution to the excess housing demand.

Public Services. Since Wright is an unincorporated community, various services are provided by Campbell County, the Wright Water and Sewer District, and Atlantic Richfield Company. The services presently provided by Atlantic Richfield gradually will be taken over by the county government or the community itself. Since Wright eventually may incorporate, but probably not for at least a few years, this EIS considers only the present plans for the transfer of services.

Gas and electricity are provided by private utilities, and operational costs are repaid through utility bills. The municipal services and responsible agencies are:

TABLE 4-6

HOUSING AND POPULATION PROJECTIONS FOR
WRIGHT, WYOMING

	Single-Family Detached	Single-Family Attached	Multi-family	Mobile Homes	Recreation[a] Vehicles	Total
Housing Projections						
1978	24	-	-	206	37	267
1985[b]	546	273	561	500	-	1880
Population per Dwelling Unit[c]	3.53	3.25	3.00	3.30	2.00	
Population Projections						
1978	85	-	-	680	74	839
1985	1927	887	1683	1650	-	6147

Source: Housing Services, Inc. 1979.

[a]Because of the shortage of housing in the area, 37 recreation vehicle spaces are presently occupied on a semipermanent basis (with an Atlantic Richfield Company estimate of two residents per unit). The plan is to eliminate long-term use of these spaces when sufficient permanent housing is developed at Wright.

[b]The present development plan for Wright anticipates that the total project will be completed in 1985. The 1985 figures, therefore, are the estimated totals for the entire community.

[c]The population per housing-unit levels are based on a survey of 400 households completed by the Gillette-Campbell County Department of Planning and Development in July 1978. The indicated figures are the averages for Campbell County, outside the city of Gillette.

- Water and sewer: Wright Water and Sewer District, repaid through service charges.
- Schools: Campbell County School District.
- Parks and recreation: Atlantic Richfield Company and Kerr-McGee Coal Company have built the community center and are contributing to park improvements. These improvements are to be maintained by the Campbell County Parks and Recreation Department.
- Streets: built and presently maintained by Atlantic Richfield Company, and dedicated to Campbell County.
- Solid waste: privately contracted.
- Police: county sheriff and Wyoming State Highway Patrol.
- Fire: volunteer, with county assistance.

Projected Baseline. The object of this task is to prepare a baseline of future employment, population, and housing requirements, based on anticipated construction and production schedules for energy-related developments (except for the ETSI project). Formulation of the ETSI-induced population and impacts are addresed later in this EIS. The growth anticipated over the next few years would alter the complexion of the socioeconomic baseline in Gillette and the GPA. This section discusses the methodology for estimating the increase in population, and the general effects on housing, public services, and the economy and population.

Economy and Population. The anticipated increase in mining and other energy related activities will double the demand for labor, both to work directly on the projects and to staff the operations of the support/service sectors.

The estimates of future employment and population for Gillette and the GPA found in Table 4-7 are based on the following methodology:

- All major energy-related projects were reviewed regarding the levels of employment for both construction and operating work force. It was estimated that by 1984 approximately 2640 additional construction workers would be employed in the county; by 1985 there would be 279; and by 1990 only 70. Permanent workers were estimated to increase from 2942 in 1980 to approximately 7500 in 1985, and to 9200 by 1990 (Tables 4-8 and 4-9).

TABLE 4-7

EMPLOYMENT AND POPULATION PROJECTIONS FOR CAMPBELL COUNTY

	Campbell County	Gillette Planning Area	Gillette
Employment			
1979	13,200	8,000	NA
1984	NA	14,000	NA
1990	NA	14,800	NA
Population			
1979	26,600	18,600	13,800
1984	43,300	31,700	24,500
1990	46,000	33,500	25,300

NA = not applicable.

TABLE 4-8
PROJECTED ENERGY-RELATED PERMANENT EMPLOYMENT IN CAMPBELL COUNTY

Year-End	1979 (Actual)	1980	1981	1982	1983	1984	1985 (Projected)	1986	1987	1988	1989	1990
Northern Campbell County												
Coal Mining												
[a]Eagle Butte (AMAX)	146	298	321	321	388	368	405	403	425	425	425	425
[b]Buckskin (SHELL)	-	-	67	70	106	156	156	156	156	156	156	156
[a]Rawhide--N & S (Carter)*	280	285	423	409	469	649	759	829	919	919	956	992
[a]Wyodak (Wyodak Resources)	55	64	67	72	112	112	112	112	112	112	112	112
[c]Wildcat Creek (Gulf)	-	-	-	-	-	-	350	350	350	350	350	350
[a]East Gillette (Kerr-McGee)	118	169	194	196	275	343	395	444	444	444	444	444
[a]Elmore (Ft. Union)	36	42	44	45	47	48	50	50	50	50	50	50
Subtotal	635	858	1116	1113	1397	1676	2227	2344	2456	2456	2493	2429
Central Campbell County												
Coal Mining												
[b]Rojo Caballos (Mobil)	-	-	-	-	173	189	255	335	347	390	434	477
[b]Pronghorn (Consolidation)	-	-	-	150	200	215	245	245	250	256	262	270
[a]Belle Ayr (AMAX)	427	425	435	437	436	467	488	486	506	506	506	506
[a]Cordero (SUNEDCO)	113	163	210	224	272	305	305	335	340	343	346	350
[a]Coal Creek (Thunder Basin/ARCO)	4	6	31	109	168	226	259	297	316	316	316	316
[a]Caballo (Carter)	122	202	217	241	251	251	251	263	273	284	295	305
[c]Wymo Fuels/K.C. Power & Light	2	-	2	2	2	?	2	2	2	2	2	2
Subtotal	668	798	895	1163	1502	1869	1805	1963	2034	2097	2161	2226
Other												
[a]Burlington Northern Railroad	268	341	369	562	562	562	562	562	562	562	562	562
[a]AMAX Office	45	47	47	47	47	47	47	47	47	47	47	47
[a]Kerr-McGee Office	3	3	3	3	3	3	3	3	3	3	3	3
[a]Wyodak Power Plant I (PP&L)	84	95	95	95	95	95	95	95	95	95	95	95
[b]Wyodak Power Plant II (PP&L)	-	-	-	-	-	-	25	75	75	75	75	75
Subtotal	400	486	514	707	707	707	732	782	782	782	782	782
Subtotal, Northern Campbell County	1035	1344	1630	1820	2104	2383	2959	3126	3238	3238	3275	3311
Other												
[c]Rocky Hill In Situ Coal Gasification (ARCO)	0	4	20	12	4	4	5	10	50	50	50	50
Subtotal, Central Campbell County	668	802	915	1175	1506	1659	1810	1973	2084	2147	2211	2276

*Portions of site located in Converse County.
**The Antelope mine is located entirely in Converse County.

[a]Included in "low" scenario.

[b]Included in "most likely" scenario.

[c]Included in "high" scenario.

Source: Campbell County Chamber of Commerce, Industrial Committee 1980.
Wyoming Department of Economic Planning and Development 1979.

TABLE 4-8 (Concluded)

PROJECTED ENERGY-RELATED PERMANENT EMPLOYMENT IN CAMPBELL COUNTY

Year-End	1979 (Actual)	1980	1981	1982	1983	1984	1985 (Projected)	1986	1987	1988	1989	1990
Southern Campbell County												
Coal Mining												
[a]Jacobs Ranch (Kerr-McGee)	213	346	353	363	365	364	364	364	364	364	364	364
[a]Black Thunder (Thunder Basin/ARCO)	309	420	469	493	493	521	550	550	550	550	550	550
[b]North Antelope (Peabody)	3	8	8	8	79	79	123	151	153	153	153	153
[c]Rochelle (Rochelle/Peabody)	-	-	-	-	-	-	-	-	-	95	290	290
[b]Antelope (NERCO)**	-	-	-	-	50	200	250	300	300	300	300	300
Subtotal	525	774	830	864	987	1164	1287	1365	1367	1462	1657	1657
Other												
[c]Greasewood Creek Uranium Mine (Cleveland Cliffs)	-	-	-	-	100	130	130	130	130	130	130	130
[c]North Butte Uranium Mine/Mill (Cleveland Cliffs)	-	-	-	-	120	210	310	460	460	460	460	460
[b]PINTEC/Thunder Uranium ISL (Cleveland Cliffs)	10	10	14	14	115	200	225	250	257	263	269	275
[c]Moore Ranch Uranium Mine/Mill (Conoco/Kerr-McGee)	-	-	-	50	150	250	350	350	350	350	350	350
[c]Uranium Mine/Mill (American Nuclear)	-	-	-	-	-	20	100	200	225	250	275	300
[b]Reno Creek ISL (Rocky Mountain Energy)	12	12	12	25	40	40	40	400	400	40	40	40
Subtotal	22	22	26	89	525	859	1155	1430	1462	1493	1524	1555
Subtotal, Southern Campbell County	547	796	856	953	1512	2014	2442	2795	2829	2955	3181	3212
GRAND TOTALS												
Coal Mining	1828	2430	2841	3140	3886	4495	5319	5672	5857	6015	6311	6412
Other	422	512	560	808	1236	1561	1892	2222	2294	2325	2356	2387
TOTAL	2250	2942	3401	3948	5122	6056	7211	7894	8151	8340	8667	8799

**The Antelope coal mine is located entirely in Converse County.

*Portions of site located in Converse County.

[a]Included in "low" scenario.

[b]Included in "most likely" scenario.

[c]Included in "high" scenario.

Source: Campbell County Chamber of Commerce, Industrial Committee 1980.
Wyoming Department of Economic Planning and Development 1979.

TABLE 4-9

PROJECTED ENERGY-RELATED CONSTRUCTION EMPLOYMENT IN CAMPBELL COUNTY (ANNUAL AVERAGE)

Calendar Year	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Northern Campbell County												
Coal Mining												
[a]Eagle Butte (AMAX)	32	35	10	40	42	52	15	15	10	-	-	-
[b]Buckskin (Shell)	10	163	96	-	-	-	-	-	-	-	-	-
[a]Rawhide--N&S (Carter)*	8	33	128	111	205	86	32	-	-	-	-	-
[c]Wildcat Creek (Gulf)	-	-	-	-	150	300	-	-	-	-	-	-
[a]East Gillette (Kerr-McGee)	-	22	-	79	66	-	-	-	-	-	-	-
Subtotal	50	253	234	230	463	438	47	15	10	-	-	-
Other												
[a]Burlington Northern Railroad	101	61	53	220	-	-	-	-	-	-	-	-
[a]Wyodak I	15	16	16	15	15	15	15	15	15	15	15	15
[a]Wyodak II	-	-	-	-	100	1000	50	-	-	-	-	-
Subtotal	116	77	69	235	115	1005	65	15	15	15	15	15
Subtotal, Northern Campbell County	166	330	303	565	578	1453	112	30	25	15	15	15
Central Campbell County												
Coal Mining												
Rojo Caballos (Mobil)	-	-	100	500	-	-	-	-	-	-	-	-
Pronghorn (Consolidation)	-	4	138	300	-	-	-	-	-	-	-	-
Belle Ayn (AMAX)	44	16	12	31	15	28	28	31	5	-	-	-
Condero (SUNEDCO)	38	42	25	-	-	-	-	-	-	-	-	-
Coal Creek (Thunder Basin/ARCO)	199	285	173	-	-	-	-	-	-	-	-	-
Subtotal	281	347	448	831	15	28	28	31	5	-	-	-
Other												
Rocky Hill In Situ Coal Gasification (ARCO)	-	1	14	10	4	4	5	30	40	-	-	-
Subtotal, Central Campbell County	281	348	462	841	19	32	33	61	45	-	-	-

[a]Included in "low" scenario.

[b]Included in "most likely" scenario.

[c]Included in "high" scenario.

*Includes construction employment on the Caballo mine.

**The Antelope mine is located entirely in Converse County.

Sources: Campbell County Chamber of Commerce, Industrial Committee 1980.

TABLE 4-9 (Concluded)

PROJECTED ENERGY RELATED CONSTRUCTION EMPLOYMENT IN CAMPBELL COUNTY (ANNUAL AVERAGE)

Calendar Year	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Southern Campbell County												
Coal Mining												
[a]Jacobs Ranch (Kerr-McGee)	50	50	25	25	25	-	-	-	-	-	-	-
[a]Black Thunder (Thunder Basin/ARCO)	133	101	40	135	85	25	25	25	25	25	25	25
[b]North Antelope (Peabody)	0	0	116	207	-	-	-	-	-	-	-	-
[c]Rochelle (Rochelle/Peabody)	-	-	-	-	-	-	-	100	225	-	-	-
[b]Antelope (NERCO)**	-	-	-	250	350	-	-	-	-	-	-	-
Subtotal	183	151	181	367	110	25	25	125	250	25	25	25
Other												
[c]Greasewood Creek Uranium Mine												
[c]North Butte Uranium Mine/Mill	-	-	6	100	250	100	-	-	-	-	-	-
[b]PINTEC/Thunder Uranium ISL	-	-	80	20	-	-	-	-	-	-	-	-
[c]Moore Ranch Uranium Mine/Mill (CONOCO, Kerr-McGee)	-	-	-	-	80	100	-	-	-	-	-	-
[c]Uranium Mine/Mill (American Nuclear)	-	-	-	50	125	150	-	-	-	-	-	-
[b]Reno Creek ISL (Rocky Mountain Energy)	-	-	87	18	30	30	30	30	30	30	30	30
Subtotal	-	-	173	188	485	380	30	30	30	30	30	30
Subtotal, Southern Campbell County	183	151	354	555	595	405	55	155	280	55	55	55
GRAND TOTALS												
Coal Mining	514	729	863	1428	588	491	100	171	265	25	25	25
Other	116	78	256	483	604	1389	100	75	85	45	45	45
TOTAL	630	807	1119	1911	1192	1880	200	246	350	70	70	70

[a]Included in "low" scenario.

[b]Included in "most likely" scenario.

[c]Included in "high" scenario.

*Includes construction employment on the Caballo mine.

**The Antelope mine is located entirely in Converse County.

Sources: Campbell County Chamber of Commerce, Industrial Committee 1980.

- Total employment was projected by applying sectoral multipliers of 1.2 for permanent workers and 0.6 for construction workers (derived from the observed relationships between these sectors in Campbell County during the 1970s) to the projected change in mining and associated construction employment.

- Conversion of employment to place of residence was based on the following assumptions: (1) 100 percent of the construction workers would be nonlocal, and (2) 100 percent of the operating workers would be nonlocal or new to the area.

- Labor force estimates were based on an assumed 3.0 percent unemployment rate.

- Household estimates were derived by dividing total labor force by 1.45 workers per household.

- Population estimates were based on a factor of 3.18 persons per new household (based on data gathered from a survey of construction and operating workers in Campbell County).

These projections indicate that the anticipated "boom" resulting from the large number of coal-mining operations (without ETSI) would have some very significant effects. In just 4 years population in the city of Gillette would nearly double—from 13,800 to 24,500. The GPA also would experience a population increase, from 18,600 to 32,700. Countywide, the population would increase to 43,300.

Housing. The GPA's population increase will also require a doubling of the housing supply in an already constrained market. Mobile homes probably will be emphasized to serve the construction work crews and to provide large numbers of dwelling units within a limited period of time. Despite attempts by local and state officials, growth probably will not occur in an orderly and managed fashion, considering that the population has already doubled in only 5 years. Much of the new housing developments are likely to be built in the GPA, outside of Gillette, because the county has somewhat looser land use and zoning controls than does Gillette (Table 4-10).

Public Services. Gillette has prepared for much of the anticipated growth. City staffs, monitoring all applications for energy development in the county and nearby jurisdictions, have consequently planned and designed the expansion of

TABLE 4-10

PROJECTED BASELINE FOR GILLETTE PLANNING AREA
(Without ETSI)

SOCIAL/ECONOMIC INDICATORS	BASELINE		
	Existing	Projected	
	1979	1984	1990
Employment	8,000	14,000	14,800
Population	18,600	31,700	33,500
Housing/Households	5,719	10,000	10,500

Source: Data for existing population and housing were obtained from the Gillette-Campbell County Planning Department 1979. Existing employment data was calculated using assumptions of 1.45 workers per household and a 3 percent rate of unemployment.

both the water and wastewater systems to accommodate anticipated population levels of 37,700 to 45,000. As mentioned above, the projected 1990 population for the larger GPA is 33,000 (see Table 4-10). The school system currently is undergoing a major expansion program. By fall 1981 it will have capacity for 8300 students. The school board also is considering adding capacity for another 500 to 800 students. Enrollment is expected to be 8800 by 1984.

Wright. The type of analysis found in the preceding section regarding projected baseline, housing, and public services for the GPA does not apply to Wright. Since the town of Wright is a planned community, it is, in principle, capable of regulating its growth according to predetermined rates and availability of public services. This EIS assumes that town planners can control the flow of in-migration to avoid any significant effects; therefore, no further discussion is required.

Converse County: Economy and Population

Converse County is located due south of Campbell County (Figure 4-1). For the most part, Converse County's economy is quite similar to that of its northerly neighbor. Ranching was the predominant sector in the early 1940s and 1950s. The demand for energy products, such as coal and uranium, spurred mining activities in the county; employment increased from 1888 in 1970 to 5932 by 1979 (Department of Administration and Fiscal Control 1980). During this time, mining employment grew from 155 to 1445 workers. Over the past few years, the economy has been quite healthy: unemployment rate generally has been near 2.5 to 3.0 percent. In September 1979, the unemployment rate dipped below 2.0 percent.

The economic base of Converse County is not as large as that of Campbell County; however, it is more diversified. There are several uranium mines and mills, either planned or in operation in the county. The two principal towns of Douglas and Glenrock are located along a major interstate highway, which gives the economic base support from travel and tourist-related expenditures (Table 4-1).

Douglas and Glenrock grew substantially during the 1970s. As Table 4-2 shows, the population of Douglas tripled between 1970 and 1978, from 2677 to 8500; by 1978 Glenrock's population doubled from 1515 to 2900.

Housing. From 1970 to 1979, dwelling units in Converse County more than doubled. The Converse County Area Planning Officer (CAPO) estimated that of the 4,717 units available in early 1979, 63 percent were single-family homes, 27 percent were mobile homes, and 10 percent were multi-family homes. Nearly half the units are estimated to be located in Douglas, close to 20 percent in Glenrock, and the remainder outside of the two communities.

Over the past few years, most of the new homes have been constructed at the edge of Douglas and Glenrock, on land that eventually was subject to annexation by the respective towns. Annexation agreements typically specify what services the developer must provide to the subdivision. In general, developers have been responsible for all costs of connecting sewer and water lines and for providing streets. In conjunction with the county, Douglas and Glenrock regulate housing developments within a 3-mile planning area around each community, according to the community's comprehensive plan.

In addition to the permanent housing, Douglas and Glenrock also have 314 hotel and motel rooms, and a new 100-room hotel is planned for Douglas in 1981. These rooms could serve as temporary housing, especially for short-term construction workers during peak employment periods (Table 4-4).

The county has few housing vacancies and these are usually only temporary. The 1977 Converse County Housing Assistance Plan (HAP) reported a 1.4 percent homeowner vacancy rate and a 0.4 percent rental vacancy rate (Converse Area Planning Office 1977). The 1979 Douglas HAP reported no vacant owner-occupied units and a 3 percent rental vacancy rate (Converse Area Planning Office 1979).

Wastewater. Sewage treatment in Douglas currently is inadequate. The municipal plant (a two-cell lagoon with 19 acres of surface area and no aeration) is designed for a population of 1900. Since the town's present population is 8500,

the facility is overloaded and incapable of meeting minimum effluent standards. However, the Wyoming Department of Environmental Quality (DEQ) has offered Douglas $100,000 in planning grant funds, and a final design is expected by sometime in 1980. Once the collection system is constructed (beginning in 1980), a new sewage system could be in operation by spring 1982 (Town of Douglas 1979).

The town anticipates that the $7 million sewage system can serve a population of 16,000 to 18,000. The collection system probably will include all subdivisions within 3 miles of the town (Town of Douglas 1979).

Local revenues to pay this cost have not yet been identified; however, the town is considering charging subdivision developers for 50 percent of the cost of the sewage collection system. Since the local share of costs is 15 percent, the extra 35 percent paid by the developers would be used to pay some of the sewage treatment plant costs, or to pay for the collection system where there are no developers to charge (Town of Douglas 1979). In addition, tap fees (currently $750) and monthly service charges (currently $4) will provide some revenues.

Glenrock recently commissioned an extensive study of its water, wastewater, and storm drainage systems (Nelson, Haley, Patterson, and Quirk 1976). The town presently is implementing the recommendations of that study, and within the next few years its water and sewer facilities will be able to serve a population of over 6200 (Glenrock Planning Commission et al. 1978).

The main sewage treatment facility for the community consists of a three-cell lagoon. Recently it was upgraded by adding aeration equipment and chlorinating the effluent. It is now considered adequate for a population of 6200 (Town of Glenrock 1978).

Water. During the summer, Douglas gets 1.1 mgd from Little Boxelder Spring, and the remainder from the North Platte River. Recently, Douglas purchased additional water rights, which allows it to withdraw up to 4 mgd from the North Platte River (Town of Douglas 1979).

The river water must be treated, using slow sand filters with a capacity of 0.9 to 1.1 mgd. This makes the maximum usable water supply an average of 2.2 mgd during the summer. Since peak water use in July (about 350 gallons per person per day) currently exceeds 3 mgd, the town has begun construction on a new $2.9 million water treatment plant, which should be on-line by the spring or summer of 1982 (Town of Douglas 1979). This new facility has a treatment capacity of 2.5 mgd, giving the town an average usable water supply of 3.6 mgd (expandable to 4 mgd) during the summer. At the current rate of 350 gpd, this 3.6 mgd could serve 10,300 people.

Glenrock's water comes from six wells near town, providing a total of 1.5 mgd. Glenrock has drilled two new wells, and plans to drill two more in a new groundwater supply north of town, which will give the town a total water supply of 3.0 mgd. The new aquifer is considered adequate for a population of 10,000 (Town of Glenrock 1978). Chlorination is the only treatment necessary, and it is provided at the wellhead.

Public Schools. Public school facilities are adequate to serve the existing enrollments. In 1978, combined enrollments in Converse County totaled 2931; in comparison, the total capacity for grades K-12 was 5055. Public school facilities in Converse County are organized into two districts: District No. 1 (Douglas), which encompasses the eastern two-thirds of the county, and District No. 2 (Glenrock), which serves the western one-third of the county.

The Douglas School District (with a total capacity of 3425 students) has three in-town elementary schools (referred to as East, South, and West), eight rural elementary schools, a junior-senior high school, and a new high school. The existing junior-senior high serves as a middle school for grades 6-8 (and possibly 5, should enrollment warrant it) (Stuart/Nichols Associates 1978). In fall 1978, enrollment in District No. 1 was 1951, with approximately 60 percent of the students in elementary schools (grades 1-6).

The Glenrock School District has one in-town elementary school, three rural schools, and one junior-senior high school complex, for a total capacity of 1630 students. The district also will soon start construction on a new $5 million

high school, which will help to increase student capacity. The current junior-senior high school will be remodeled and used as a middle school. Enrollment in District No. 2 was 980 students, 538 (55 percent) of whom were in grades 1-6. The overall student/teacher ratio was 19.5, up from 18.9 the previous year.

Projected Baseline.

Economy and Population. The development of energy resources in Converse County will cause the county to grow substantially. Table 4-11 identifies the anticipated projects from the mining sector. There also are other activities. The most significant will be the Panhandle Eastern Coal Gasification Plant; however, its exact magnitude is uncertain at this time.

Attempts have been made to project the future population for Converse County, based on the probability of these energy developments. Wyoming's Department of Administration and Fiscal Control estimated that population would increase from 13,500 in 1979 to 17,400 by 1985, and to 21,800 by 1990 (Department of Administration and Fiscal Control 1980). Other projection attempts (by Stuart/Nichols in 1978 and Woodward-Clyde Consultants in 1979) produced very similar estimates for 1985 (14,400 to 18,800) but slightly lower estimates for 1990 (15,600 to 19,300). (Stuart/Nichols 1978, and Woodward-Clyde Consultants 1979).

Future population estimates for the towns of Glenrock and Douglas appear in Table 4-12. While Douglas is not expected to grow substantially over the next 10 years, Glenrock is expected to double in population—from 2900 in 1980 to 4700 in 1985, and to 5100 by 1990.

Public Services. Based on the projected population and planned expansion for public services, the following conclusions may be drawn about Douglas:

- Planned wastewater treatment plant—expansion and upgrade to serve 18,000; projected population is 9400 to 9800 by 1990. Conclusion: there should be excess wastewater treatment capacity.
- Water supply planned—expansion to serve 10,000 people; projected population 9800 people. Conclusion: there should be adequate capacity to 1990.

TABLE 4-11
PROJECTIONS OF EMPLOYMENT IN THE MINING SECTOR IN CONVERSE COUNTY, 1978-1985, 1990

		1978	1979	1980	1981	1982	1983	1984	1985	1990
Bear Creek Uranium Company Mine & Mill	P	235	285	300	300	300	300	300	300	300
	C	-	-	-	-	-	-	-	-	-
Exxon Highlands Mines, Mill, and ISL	P	610	650	650	650	650	730	730	730	730
	C	-	72	72	72	72	72	-	-	-
United Nuclear Morton Ranch Mine & Mill	P	90	160	250	390	390	390	390	390	390
	C	-	80	100	-	-	-	-	-	-
Kerr-McGee South Powder River Basin Mine & Mill	P	-	89	89	99	101	111	152	152	157
	C	-	50	50	223	233	40	40	92	92
Kerr-McGee Bill Smith Mine	P	18	18	18	97	143	207	238	209	209
	C	-	-	-	-	-	-	-	-	-
NERCO Dave Johnson Coal Mine	P	138	141	144	147	150	153	156	156	168
	C	-	-	-	-	-	-	-	-	-
MHF V-1 Refinery	P	8	8	8	8	60	60	60	60	60
	C	-	-	250	250	-	-	-	-	-
Total	P	1099	1351	1459	1691	1794	1951	2026	1997	2014
	C	0	202	472	545	305	112	40	92	92

Source: Updates of Wyoming Department of Economic Planning and Development, 1979. 1990 employment was assumed to be equal to 1985 employment unless otherwise specified.

Notes: Table does not include the Northern Energy Resources Co./Pacific Power & Light Antelope strip mine to be sited 20 miles south of Wright (in planning and permit stage); and the Panhandle coal gasification project.

P = Permanent
C = Construction

Schedule changes may cause construction and operation employment figures given here to move forward by two years.

TABLE 4-12

PROJECTED BASELINE FOR CONVERSE COUNTY
(Without ETSI)

SOCIAL/ECONOMIC INDICATORS	BASELINE		
	Existing[a]	Projected[b]	
	1979	1984	1990
Employment	5,932	7,600	8,400
Population	13,400	14,700 - 18,700	15,600 - 21,800
Housing/Households	4,700	5,900	6,600

[a] Employment and population data are taken from Wyoming Department of Administration and Fiscal Control, 1980. Data on housing comes from the Converse Area Planning Office 1979.

[b] The projected population for 1984 and 1990, which is obtained from Wyoming Department of Administration and Fiscal Control, 1980, serves as the basis for estimating future housing (using a ratio of 3.18 persons per household) and future employment (assuming 1.45 workers per household and a 3 percent rate of unemployment).

- Public schools have a capacity of 3425 students; 1978 enrollment was 1951. Conclusion: population is not expected to increase by more than 15 percent in 10 years, and public schools can accept a growth of over 75 percent. Therefore, there should be excess capacity to and beyond 1990.

About Glenrock:

- Planned wastewater treatment plant—capacity is 6200 people; population is projected for 5100 by 1990. Conclusion: there should be excess capacity through 1990.

- Water supply capacity is designed for 10,000 people. Population is projected for 5100 people. Conclusion: there should be excess capacity through 1990.

- Public schools capacity is 1630, enrollment is 980. Conclusion: insufficient data at this time to draw any sound conclusions, but it is estimated that there might be sufficient capacity for 1985. After that, the school board would have to add capacity to the system.

Weston County: Economy and Population

Weston County is located due east of Campbell County. While it has very little in the way of known strippable coal deposits (EIS Powder River Basin Coal), it serves as a "bedroom community" for those working in Campbell County. Many employes of major energy development companies in south Campbell County have located in nearby Newcastle in Weston County, rather than in Gillette or Wright in Campbell County. An estimated 60 to 65 percent of the workers at Kerr-McGee's Jacobs Ranch mine commute 50 miles daily from Newcastle on company-provided buses. (Newcastle City Engineer 1980).

The county's economic base generally is substantial and diversified. Aside from the coal mining in Campbell County, much of the employment is based on oil drilling and pumping (since the early 1950s), forestry and the processing of forest products, and trucking. Two major regional trucking firms are located in Newcastle (Newcastle City Engineer 1980).

The county's population has steadily grown over the past few years; between 1970 and 1979, it increased from 6300 to 7900, much of it since 1977. A large part of this increase in population has settled in Newcastle and Upton.

Newcastle is the largest of the two communities, with an estimated 1980 population of 3900 people, an increase of 400 people from the previous decennial census. Upton had a population of 927 in 1975; by 1979, the population had grown to 1500 (Newcastle City Engineer 1980).

Housing. Housing in Newcastle is adequate for the existing population. There are about 1200 single-family dwelling units, 6 apartment buildings (with about 80 units each), and 20 mobile home parks (accommodating about 400 mobile homes). Vacancy rates in the city are quite low. Little housing information is available for Upton.

Wastewater. Newcastle's wastewater treatment facility currently is inadequate for the population; it is operating over capacity and is not meeting EPA discharge standards. Recently, the city has applied for EPA 201 planning grant aid to (1) identify the future population and wastewater treatment load requirements, and (2) plan and design the facility to meet tertiary-treatment-level standards. Upton also is facing the expansion of its sewer treatment plant. A change in EPA ratings has lowered the plant's estimated treatment capacity to about 1000 people (Newcastle City Engineer 1980). Upton also has requested aid from EPA to complete the preliminary engineering design by late 1980 (Upton City Engineer 1980).

Water. Neither community faces any problems with the existing water supply levels or the water quality.

Schools. The two school districts of concern in Weston County are Weston County District No. 1 (Newcastle) and District No. 7 (Upton). Newcastle has three schools: an elementary, a junior high, and a senior high (completed within the past two years). Enrollments at the senior high school have been declining. The junior high has substantial excess capacity (between 300 and 400 surplus seats). Upton's school district also appears to have excess capacity. The district recently completed the city's grade school.

Projected Baseline

Economy and Population. It is anticipated that Weston County, unlike its neighbors Campbell and Converse Counties, will have only a modest growth over the next 10 years (Table 4-13). A continued economic base will come principally from the county's role as a "bedroom community" for those employed in Campbell County. The oil sector is not expected to grow by any appreciable amount. Consequently, most population projections for Weston County show a possible increase from 7900 in 1979 to 8700-9700 by 1984 and to 10,000 by 1990 (Department of Administration and Fiscal Control 1980). Stuart/Nichols report a slightly higher estimate for 1985—9700 people (Stuart/Nichols 1978).

Future population estimates for Newcastle reflect a slightly higher growth--from 3900 in 1980 to 5000-5500 by 1990 (Newcastle City Engineer 1980). However, this is the optimistic view. Upton, which has grown substantially from 900 to 1500 in 4 years, is in a similar position. The town has tried aggressively to attract new population by financing residential and commercial construction. As a result it has a very optimistic projection: 5000 people by 1985 (Upton City Engineer 1980). The combined increases of Newcastle and Upton exceed the countywide estimates. However, both estimates for Newcastle and Upton probably are too optimistic and should be significantly lower.

Housing. There is very little data with respect to identifying the future housing impacts for either town.

Public Services. The design capacity for Newcastle's wastewater treatment plant has yet to be determined; the town is still uncertain about which population projections it feels comfortable with. There appears to be an adequate water supply and with declining high school enrollments and excess capacity in the junior high school, there appears to be adequate capacity in the district's public schools (Newcastle Superintendent of Schools 1980).

Upton's wastewater treatment situation also is uncertain; it has not yet received approval for its EPA 201 funding. The Upton School District is considering the construction of a new high school and expanding the intermediate school.

TABLE 4-13

PROJECTED BASELINE FOR WESTON COUNTY

SOCIAL/ECONOMIC INDICATORS	BASELINE Existing[a] 1979	Projected[b] 1984	1990
Employment	3,346	3,300	4,400
Population			
Weston County	7,900	8,700	10,000
Newcastle	3,900	5,000	6,000
Housing/Households	2,700	2,900	3,400

[a] Employment and population data are taken from Wyoming Department of Administration and Fiscal Control, 1980. Data on housing comes from the Newcastle City Engineer 1980.

[b] The projected population for 1984 and 1990, which is obtained from Wyoming Department of Administration and Fiscal Control, 1980, serves as the basis for estimating future housing (using a ratio of 3.18 persons per household) and future employment (assuming 1.45 workers per household and a 3 percent rate of unemployment).

Niobrara County: Economy and Population

Located south of Weston County (see Figure 4-1) Niobrara County is principally a rural county in which agriculture plays a vital economic role. The northern two-thirds of the county are mainly open range; the southern portion of the county supports dry-land and irrigation farming. Between 30 and 35 percent of the jobs available in the county (420 jobs in 1979) are in the agricultural sector (Lusk Town Planner 1980).

Between 1970 and 1975, population decreased slightly. Since then, however, energy development in the neighboring counties caused the population to increase from 2895 to 3132 people in 1979 (Table 4-2).

Lusk, the county seat, is located in the southern portion of the county. Lusk has grown considerably in the past few years (from 1625 people in 1975, to 1750 in 1979). Over 55 percent of the population of Niobrara County resides in Lusk, which serves as a "bedroom community" for those working in Converse County and also houses emigrants from ranch to town as well as increasing numbers of retired people (Niobrara County Land Use Plan 1977).

Housing. Housing in Lusk consists of about 650 total units. A quarter of the single-family units are rental. In addition, there are 6 apartment buildings, 50 mobile homes, and 6 motels (150 units) (Table 4-4). Increased demand for low-income housing has caused Lusk to ask HUD to build 20 homes targeted for rentals.

Public Services. The treatment capacity for the city's wastewater treatment plant currently is being scrutinized by the EPA. Originally, the treatment plant was designed for a population of 3500 people; however, recent changes in EPA standards have assessed this plant as inadequate (Lusk Land Use Plan 1977). The planned capacity is for 282,000 gpd for approximately 2800 to 3000 people. The grant already has been approved by Wyoming's EPA, but there are still some problems with the state engineer. If the grant is finally approved, the plant could come on line by early 1982. Lusk also is currently expanding the water system, since the supply is barely adequate. The three wells it is planning to add will help double the existing capacity of 2.2 mgd.

The entire county has one unified school district, which has a total capacity of 750 students. 1979 enrollment for the three schools in Lusk was 530 students; enrollment for the four rural schools was 31, making a combined total of 561 students in 1979 (Table 4-14).

Projected Baseline.

Economy and Population. Niobrara County is expected to continue being a "bedroom community" for Converse County, but to show very little increase in population. Countywide population is projected as 3250 by 1985 and 3300 by 1990—only a slight increase from 3150 in 1979. Because city officials expect the population for Lusk to double by 1985 (Table 4-15), they have planned for the expansion of wastewater treatment capacity and water supply. However, the city's projections may be too optimistic, particularly in light of the county's projection. Therefore, Lusk's 1984 and 1990 population projections are estimated at 1900 and 2000, respectively. And since the school district shares Lusk's optimism, the combination of existing excess capacity and the use of temporary modular units should provide the lower projected population with sufficient capacity.

ETSI IMPACTS

To assess the impact of ETSI on the baseline, the construction and operating work force must be analyzed with respect to the origin, location, and secondary employment generated.

Construction

Employment and Population. This section discusses the effects of the construction work force on employment and population in four Wyoming counties. The employment levels and time schedules of the major construction activities are estimated, including the building of the three preparation plants (1982-1989), water supply system and slurry supply lines (1983-1985), and the first 100 miles of the main line (1984). The availability of the labor supply and housing, travel time and distance to the construction sites, and competitive wages, among other factors, provide a basis for estimating the magnitude and the residential settlement patterns of the in-migrating nonlocal work force. To evaluate the

TABLE 4-14

PUBLIC SCHOOLS IN NIOBRARA COUNTY

Type	Enrollment 1980	Capacity
Lusk		
Elementary	228	275
Junior High	119	175
High School	183	300
Subtotal	530	750
Rural Schools (four schools, K-8 grades)	31	
Total	561	

Source: Niobrara County Superintendent of Schools 1980.

TABLE 4-15

PROJECTED BASELINE FOR NIOBRARA COUNTY

SOCIAL/ECONOMIC INDICATORS	BASELINE		
	Existing[a]	Projected[b]	
	1979	1984	1990
Employment	1,429	1,450	1,500
Population			
Niobrara County	3,132	3,200	3,300
Lusk	1,750	1,900	2,000
Housing/Households			
Niobrara County	1,160	1,185	1,222
Lusk	650	700	740

[a] Employment and population data are taken from Wyoming Department of Administration and Fiscal Control, 1980. Data on housing comes from the Lusk Town Planner 1980.

[b] The projected population for 1984 and 1990, which is obtained from Wyoming Department of Administration and Fiscal Control, 1980, serves as the basis for estimating future housing (using a ratio of 3.18 persons per household) and future employment (assuming 1.45 workers per household and a 3 percent rate of unemployment).

overall impact of the project construction activities, the population associated with the influx is estimated and compared to existing and future projected levels.

Table 4-16 presents the estimated work force schedule for the construction projects in Wyoming, under the proposed action. Employment schedules for preparation plant construction are given quarterly from 1982 through 1989, with the peak demand occurring in the second quarter of 1984. The principal assignment for spread crew IV is to build the slurry gathering lines from the preparation plants and the water supply system, which would take more than two years to complete. Construction of the northernmost 100 miles of the mainline would require approximately slightly over three months and is scheduled to take place during the fourth quarter of 1984.

Peak construction employment would be likely to occur in 1984 (Table 4-16). Construction activity at the preparation plants would be at maximum levels in the first three quarters (440 workers) but would then drop to half this amount in the fourth quarter. Construction of the first 100 miles of the main line (work crew of 670) is scheduled to take place in the fourth quarter of 1984 to avoid further crowding the already crowded area. Despite the attempts to ease the impact, construction work force would be at its maximum in the fourth quarter, with 1015 workers.

Local/Nonlocal Mix. Nearly all the construction workers are expected to migrate into the region. This assumption is based on the following information:

- The local labor supply in the largest communities (Gillette and Douglas) already is limited. For the past five years, the unemployment rate in Campbell and Converse counties ranged between 2.3 and 3.4 percent (Department of Employment Security 1976-79).

- As discussed in the section on Projected Baselines for Campbell and Converse counties, there is an additional demand for labor, resulting from anticipated construction and operation of energy developments (mines, electric power-generating plants).

- There would be an increase in new workers. While it may be possible to hire additional local residents, the vacated jobs probably would soon be filled by other in-migrants seeking higher wages, etc.

TABLE 4-16

WORKFORCE ESTIMATES FOR PREPARATION PLANTS, WATER SUPPLY LINES, AND FIRST 100 MILES OF MAINLINE

	1982		1983				1984				1985			
Project Component	3	4	1	2	3	4	1	2	3	4	1	2	3	4
North Rawhide Prep. Plant		5	19	29	43	63	72	80	68	38	5	9	20	14
Jacobs Ranch Prep. Plant		24	95	131	176	224	260	278	200	114	11	24	50	31
North Antelope Prep. Plant		5	15	29	40	55	70	82	70	50	60	50	25	12
Subtotal		34	129	189	259	342	402	440	338	202	76	83	95	57
Water Lines and Slurry Gathering Lines			60	360	360	60	90	260	260	30	15			
Well Field			41	41	41	41	41	41	41	41				
Water Pump Station				8	22	23	20	18	17	12				
Slurry Pump Station P-2				20	49	49	39	39	38	30				
Slurry Pump Station P-3				20	49	49	39	39	38	30				
Subtotal		34	230	638	780	564	631	837	732	345	91	83	95	57
Main Pipeline Construction										670				
Total		34	230	638	780	564	631	837	732	1015	91	83	95	57

TABLE 4-16 Concluded

Project Component	1986				1987				1988				1989			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
North Rawhide Prep. Plant	7	20	18	8	2	5	11	8								
Jacobs Ranch Prep. Plant	60	69	52	35	35	31	29	20	15	15						
North Antelope Prep Plant	14	18	21	49	56	25	18	5	5	11	21	49	56	25	18	5
Subtotal	81	107	91	92	93	61	58	33	20	26	21	49	56	25	18	5
Water Lines and Slurry Gathering Lines																
Well Field																
Water Pump Station																
Slurry Pump Station P-2																
Slurry Pump Station P-3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	81	107	91	92	93	61	58	33	20	26	21	49	56	25	18	5
Main Pipeline Construction	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	81	107	91	92	93	61	58	33	20	26	21	49	56	25	18	5

Residential Location Criteria Of Construction Workers. A review of the recent literature on construction workers (Mountain West Research 1975; Northern Tier Pipeline 1979), and in particular the pipeline construction workers, suggests that there is a difference in the socioeconomic characteristics, the migration, and the relocation patterns between those workers hired to work for fixed-site construction projects (preparation plants, buildings, etc.) and non-fixed-site construction activities (pipelines). Indeed, this difference is well documented. In surveys performed for the Old West Regional Commission in 1975 and the Northern Tier Pipeline Company in 1979, Mountain West Research found that these two subsets of construction workers need to be delineated further. For example, each group traveled differently: 48.9 percent of fixed-site construction workers brought their families with them, but only 16.3 percent of pipeline workers brought their families with them. Furthermore, each set sought a different type of housing: fixed-site workers tended to live in mobile homes (53 percent) and, where available, apartments (10 percent); pipeline workers lived in motels (41 percent) and travel trailers (24 percent) (Mountain West Research 1975; Northern Tier Pipeline 1979).

These observations, as well as an examination of the construction schedules, revealed that the various building activities found in Table 4-16 could be characterized as follows:

- The main slurry pipeline construction work force (spread crew I) would be mostly transient, and would generally locate in communities with a large supply of motels and facilities for travel trailers, staying for a short period (one to several months). These workers tend to commute up to 50 miles daily to the job site; as commute times approach one hour, they begin to relocate.

- Most of the preparation plant construction workers are more stable. They tend to seek apartments, mobile homes, and, when possible, detached single-family homes.

- In between are those hired to build the water supply system and the pump stations, and about one-third to one-half of the preparation plant workers. The two-year construction schedule would make this group tend to seek reasonably long-term housing, such as apartments and mobile homes.

In addition to these factors, estimates of the locations of the in-migrating nonlocal labor force are based on:

- The location of the project site
- The availability of adequate housing and services in the nearby communities
- The distance and time to the various communities
- The available transportation services, such as bus, van, or carpool
- Recent experiences in the region for fixed-site construction. (Information obtained from several applications to the Wyoming Industrial Siting Council, surveys of employment commute patterns, and from the Mineral Development Monitoring System)

Table 4-17 estimates the distribution of residential location choices for each of the construction activities to the principal communities. The Gillette Planning Area is the most attractive of the communities because of its size, amenities, and locale. Wright, located near the center of the coal mining activities in south Campbell County, is a newly formed and rapidly growing community. The towns in Converse County likely to attract construction workers are Douglas and Glen Rock. Newcastle, located in Weston County, would attract some construction workers. The principal community in Niobrara County is Lusk, which has temporary housing (motels, travel trailer parks) (Table 4-4).

In examining the percentage distribution of Table 4-17, it should be noted that the influx of main pipeline construction workers in Niobrara and Converse counties is expected to last from one to two months. These workers would probably locate in Gillette to complete the remaining portion of the pipeline.

Estimates of nonbasic or service-sector employment were based on the following assumptions:

- 100 percent of the service workers would be newcomers.
- Fixed-site construction jobs would generate or induce 0.6 new service-related jobs (Woodward-Clyde Consultants 1980-internal document based on analysis of Campbell County basic/nonbasic employment ratios).
- The induced effects of pipeline construction workers is difficult to assess; there is little information regarding such factors as expenditure

TABLE 4-17

ESTIMATED RESIDENTIAL LOCATIONS FOR CONSTRUCTION EMPLOYMENT TO PRINCIPAL COMMUNITIES[a] (PERCENT)

Project Component	Campbell County					Total
	GPA	Wright	Converse	Newcastle	Niobrara	
North Rawhide Prep Plants	100	-	-	-	-	100
Jacobs Ranch Prep Plants	40	40	-	20	-	100
North Antelope Prep Plants	35	30	20	15	-	100
Water Supply System, Slurry Supply Lines	65	25	-	-	10	100
Well Field	-	-	20	-	80	100
Pump Stations	15	15	-	-	70	100
Main Line	100 [b]	-	(50)	-	(50) [b]	100

[a] Location pattern based on 1) a Heuristic analysis of available transportation, housing by type and services, 2) a review of several permit applications to the Wyoming Industrial Siting Council, and 3) a review of the Mineral Development Monitoring System maintained by Stuart-Nichols Associates for the Wyoming Department of Economic Planning and Development.

[b] Transient workforce for the main-line (spread crew I) would more than likely relocate at least once during the quarter.

patterns, propensity to consume, and ability of the service sector to respond. However, the same 0.6 multiplier was used here to determine the worst case condition.

- Permanent nonlocal workers are anticipated to induce about 0.8 new service jobs.

Population. Estimates of the population increase associated with the combined construction and service activities for each community appear in Table 4-18. The following assumptions were used to develop this table.

- Fixed-site construction nonlocal workers:
  - 48.9 percent were accompanied by their families. Average household size was 3.61 persons.
  - total transient population = 2.28 x the number of construction workers.
- Pipeline construction nonlocal workers:
  - 16.3 percent were accompanied by their families. Average household size was 2.83 persons.
  - total transient population = 1.30 x the number of pipeline workers.
- Nonbasic workers:
  - 1.6 service workers per service-worker household. Average household size was 2.5 persons.

The peak construction period would occur in 1984, during which period communities such as the GPA and Wright are expected to experience a substantial increase in population because of fixed-site construction.

The population from the main slurry pipeline crew is expected to locate first in the lower two counties (Niobrara and Converse). Later, as commute times increase, the nonlocal workers probably would relocate to the GPA. Without the main slurry pipeline construction work force, the increase in population in the Gillette Planning Area and Niobrara County will be 4 and 11 percent, respectively, of the projected 1984 population. A more detailed exploration of the calculations used to estimate future population appears in Appendix.

TABLE 4-18

PEAK ETSI-RELATED POPULATION FOR CONSTRUCTION AND SERVICE SECTORS (1984)

Area or Community and Project Component	Quarter 1	2	3	4
Gillette Planning Area				
• Fixed-Site	885	1297	1146	428
• Main Pipeline (100%)				1500[a]
Total				1928
Wright				
• Fixed-Site	521	692	579	254
Converse County				
• Fixed-Site	71	78	71	58
• Main Pipeline (50%)				750[a]
Total				808
Weston County				
• Fixed-Site	203	216	164	96
Niobrara County				
• Fixed-Site	351	405	399	273
• Main Pipeline (50%)				750[a]
Total				1023

Note: A more detailed explanation of these calculations is given in the Appendix H.

[a] Transient workers for the pipeline (and their families) would probably locate first in Niobrara and Converse counties and then relocate in the Gillette Planning Area.

Housing. Peak housing requirements deriving from ETSI construction probably would occur in 1984. The most significant of these would take place in the GPA (Table 4-19). The population associated with the spread crew building the main slurry pipeline would demand approximately 840 units, most of which would be temporary quarters (e.g., motels). These workers are expected to remain in the lower section of Niobrara and Converse counties for about six to eight weeks and move to the Gillette vicinity for completion of the final stages of the main slurry pipeline. These estimates for temporary housing are overstated: they include a high estimate for nonbasic employment to serve the highly transient main slurry pipeline construction crew.

The incremental impact brought about by this pipeline construction crew would be significant, but would last for only 6 to 8 weeks per community. Between the construction workers' increased use of travel trailers and campers, and their doubling up in rooms, it is expected that the influx of workers can be accommodated during the short term.

For the fixed-site workers, housing (350 to 500 units) presents a different and longer-term problem. Residential distribution patterns, such as those found in Table 4-17, indicate that construction workers would tend to locate in a number of communities with already-limited housing (in terms of both the actual supply and the cost of housing). Since late 1979, new housing construction has been constrained by very high mortage rates and the unavailability of mortgage financing in Wyoming (the Gillette region in particular).

The short-term remedy has been to add more mobile homes to relieve immediate demands. But this does nothing to increase the permanent housing supply. As the following section on cumulative effects notes, it is uncertain whether the industry can provide the housing in the very short time allowed, given the recent history of monetary and financial difficulties as well as the physical limitations.

Public Services. The discussion of ETSI impacts on wastewater, water, and schools is covered in detail in the section on cumulative effects.

TABLE 4-19

ETSI-RELATED HOUSING REQUIREMENTS
DURING PEAK CONSTRUCTION PERIOD (1984)

Area or Community and Project Component	Quarter 1	2	3	4
Gillette Planning Area				
• Fixed-Site	378	554	490	183
• Main Pipeline (100%)				921
Total				1104
Wright				
• Fixed-Site	223	296	243	109
Converse County				
• Fixed-Site	30	33	30	25
• Main Pipeline (50%)				461
Total				486
Weston County				
• Fixed-Site	87	92	70	41
Niobrara County				
• Fixed-Site	150	173	170	116
• Main Pipeline (50%)				461
Total				577

Note: A more detailed explanation of these calculations is given in the Appendix.

Operation, Maintenance, and Abandonment

Employment and Population. It is assumed that project headquarters and the Western District operations office would be located at Jacobs Ranch. There also would be preparation plant employees at North Rawhide and North Antelope. With regard to allocating the operations personnel at the preparation plants, it would be reasonable to divide the personnel according to plant capacity. Of the eventual total of 37.5 MMTA throughput, 5.0 MMTA would be processed at North Rawhide, 22.4 MMTA at Jacobs Ranch, and 10.0 MMTA at North Antelope, resulting in estimates of about 27, 155, and 52 operating personnel at the respective preparation plants. In addition there would be another nine workers at the Niobrara well field.

The proposed project would begin operation in 1985.

The completion of ETSI construction projects would make a substantial labor pool available. A review of Tables 4-8 and 4-9 shows that there would be a substantial drop-off in construction-related jobs after 1984.

To determine the net effect on employment, population, and government services, the following two scenarios were considered.

Case 1. Assume that all preparation plant personnel are nonlocal. The net effect on employment, population, and services are:

Employment. Net effect: No significant impact.

- At the end of 1984, between 600 to 800 ETSI construction workers would leave the area.
- An estimated 1000 workers from other construction jobs also would leave the area.
- This influx of 260 would fill only part of the void.

Population. Net effect: No significant impact.

- The departure of the ETSI construction workers would result in a population decrease of 900 to 1200 people.

- The operating preparation plant workers would result in an increase of 800 people.

Housing. Net effect: A shift in the housing preference and a higher vacancy rate.

- Permanent workers generally prefer detached, single-family units. This would result in accelerated construction programs to ratify these increased demands.
- Departing workers have lived in mobile houses and apartments. Therefore, there would be a surplus of these units and higher vacancies.

Public Services. Net effect: No significant impact.

- Services such as sewer, water, schools, etc. would had been expanded to meet the needs of the departing construction workers and their families.
- No new services would be required to serve these new residents.

Case 2. Assume that all operating preparation plant personnel are local. The net effect on employment, population, housing and services would be zero.

Socioeconomic effects created by project abandonment are expected to be insignificant. The presence of mining activities in the area suggests that operating personnel who are put out of work because pipeline operations are discontinued would not experience long-term unemployment. Counties in Wyoming, particularly Campbell, would experience a tax loss once the property was depreciated. However, as the next section shows, the taxes accruing because of ETSI are a relatively minor portion of the Campbell County budget.

CUMULATIVE EFFECTS IN WYOMING

This section identifies, evaluates, measures (where possible), and describes the potential total effects of combining the existing energy developments, the planned and proposed activities, and the activities of the ETSI construction and operating workers. In some cases, only some general comments can be made regarding the extent and the areas where the impacts would be most significant. Previous sections of this report have already addressed separately the effects accrued to the existing and projected baseline, as well as to the ETSI work crews.

Cumulative Effects on Gillette and the Gillette Planning Area Economy and Population. In the near term, the economy of Gillette and the GPA would be stretched out of shape. This area would experience strong positive and negative income effects because of the presence of firms that offer higher wage and salary scales than currently available in the city, as well as because of the introduction of new households with higher per capita incomes. However, the extent of the impacts cannot be measured accurately, nor can the net significance of this "income boom" be ascertained. What can be offered is an identification of the types of impacts and the possible direction these impacts would take.

- The presence of from 2942 to 8800 permanent workers earning an average of $20,000 per year would generate between $59 million and $176 million of base income between 1980 and 1990.
- The momentum generated by the boost to the economic base and the resulting multiplier effect can be readily recorded with respect to the increased nonbasic employment and service sectors.
- The higher incomes obviously would help raise the price of goods and services, and thus cause higher rates of inflation.
- However, since the economy is not a closed one, higher incomes would generate additional goods and services and, in some respect, raise the standard of living.
- During this time, there would be temporary shortages in many sectors (e.g., retail services and housing). However, these eventually would be resolved.

As Table 4-20 shows, the cumulative impact of ETSI on employment, population, and housing in the Gillette Planning Area and Campbell County in general would not be very significant. The peak fixed-site construction crews during 1984 would increase employment in the GPA. This increase would amount to only 4.6 percent of the estimated total employment. The increase in employment (including both direct and indirect workers) from the mainline construction work crews would be only 7.7 percent. Similarly, the increase to population from either the fixed-site or the mainline pipeline crews would not be significant: the population increase resulting from peak fixed-site construction activities would amount to 4.1 percent. The combined total population resulting from fixed and mainline workers would be 1927 people (Table 4-18), thus raising

TABLE 4-20

CUMULATIVE SOCIOECONOMIC IMPACTS FOR THE GILLETTE PLANNING AREA

Impact Summary Social/Economic Indicators	Baseline Existing 1979	Baseline Projected 1984	Baseline Projected 1990	Construction Impacts	Construction Impacts Number	Construction Impacts % Change (over 1984)	Operation Impacts	Operation Impacts Number	Operation Impacts % change (over 1990)	Cumulative Impacts Number 1984	Cumulative Impacts Number 1990
Employment Gillette Planning Area estimated[a]	8,000	14,000	14,800							14,500	15,000
Fixed site (assumes all nonlocal)				Fixed	645	4.6	permanent	233	1.6		
Mobile Pipeline (assumes all nonlocal)				Mobile Pipeline	1072	7.7					
Population GPA	18,600	31,700	33,500							32,900	33,900
Fixed site (3rd quarter 1984)				Fixed	1297	4.1	permanent	465	1.4		
Mobile Pipeline (4th quarter 1984)				Mobile Pipeline	1499	4.7					
Housing/Households in GPA											
Total Dwelling Units	5,719	10,000	10,500							10,500	10,600
Fixed Site				Fixed	554	5.5	permanent	186	1.8		
Mobile Pipeline				Mobile Pipeline	921	9.2					

TABLE 4-20 Concluded

	Existing GPA	1984 GPA	1990 GPA
Population	13,800[a]	31,700	33,500
Public Service			
Waste Water			
Supply	13,800	37,700	42,000
Demand	13,800	31,700	33,500
Capacity	0	+6,000	8,500
Service Quality	Adequate	Excess capacity	Excess capacity
Water			
Supply	13,800	42,000-45,000	42,000-45,000
Demand	13,800	31,700	33,500
Capacity	0	10,300-13,300	8,500-11,500
Service Quality	Adequate	Excess capacity	Excess capacity
Schools			
Available Space	6,500	8,800-9,100	
Enrollment	4,900	7,700	9,000
Capacity	1,600	1,100-1,400	
Service Quality	Excess capacity	Excess capacity	Capacity Unknown

Property Tax Base	ETSI Assessed Value (AV)	Mill Levy ($/$1000 AV)	Property Tax Revenues	1979 County Assessed Value	Property Tax Revenue	ETSI Inc. to 1979 County Tax Base
	24,657,000	65.75	1,621,000	596,173,894	39,198,000	4.1%

[a]Since wasetwater and water services currently serve Gillette City residents, existing population estimates are for the city population only. It is anticipated that the city boundaries will eventually be expanded to the CPA boundaries

the total over 5 percent; however, nearly 1500 of those workers are temporary mainline workers who would be in the area for less than two months.

The effects on the area's population resulting from the ETSI permanent work force would be less significant. The permanent work force would be 191 workers, which is substantially less than the 645 fixed-site workers in the area.

In addition, these 191 workers would constitute less than 1.6 percent of the total employment in the GPA. The same argument can be made for both population and housing increases resulting from ETSI.

Public Services. The city of Gillette has done much to anticipate and prepare for its future growth. The city planning and engineering staffs have been monitoring all applications for coal mine permits in the county. Consequently, both the water and wastewater systems are being expanded to accommodate anticipated population levels of 37,700 to 45,000 people—sufficient for even the GPA (Table 4-20). The school system, which currently is undergoing a major expansion program, will have capacity for 8800 students by fall 1981 (1979 enrollment was approximately 5000). In addition, there should be sufficient capacity within the next two years to accommodate the short-term surge in growth.

Housing. A static analysis of the housing situation from Table 4-20 indicates that increased housing demand from ETSI would not significantly increase the cumulative demand for housing: fixed-site construction workers would require about 554 units, or 5.5 percent of the 10,000 units demanded by 1984. On the whole, however, housing remains a potential problem in the community. There are many reasons for this situation:

- Most likely, the sudden surge in employment and the in-migration of workers and their families would cause a near-term housing shortage. This shortage would be partially resolved by importing more mobile homes (as temporary units). However, this solution creates some structural problems that need to be addressed.

- A certain segment of the construction/financing community generally will be constrained by speculation and the uncertainty of the boom and bust cycle (along with a concern for the coal market).

- Despite the recent loosening of the mortgage market, available financing in Gillette continues to remain a chronic problem. The local lending institutions have insufficient funds on hand.

- The rising costs of construction have kept housing prices in Gillette higher than in any other community in Wyoming, except for Jackson. (A 1200 square-foot house in Gillette sold for $72,000 in early 1980.)

In response to these problems, many of the energy companies (e.g., Atlantic Richfield and Exxon) have initiated impact-mitigation programs with the assistance of the local communities and the state of Wyoming's Industrial Siting Council. These programs largely have addressed the problems of limited housing under excessive growth-rate conditions. These efforts range from almost minimal and no-cost programs--such as the down payment assistance (minimum interest or partially forgiven principal and interests) and purchase guarantees (to reduce the risk to developers in building houses on speculation)--to substantial involvement, such as the establishment and support of a new town (e.g., ARCO's establishment of Wright).

Contribution to Property Taxes and Net Fiscal Impact. So far, the analysis of the potential effects of the combined ETSI construction-permanent workers and the nonbasic sectors serving these workers would not significantly increase the projected presence of the total employment and population of the GPA. Similarly, the cumulative total of all the workers and population would not seriously affect the planned wastewater treatment capability or the water supply. The city of Gillette has anticipated and prepared for the expected growth.

However, this does not mean that the future population would have minimal effects, only that these effects have shifted from the direct provision of services to the cost of providing the service. The net fiscal impact of the total projected population would be significant. Table 4-21 summarizes: (1) the potential revenues and costs and the net surplus or deficit for Campbell County, (2) the general fund accounts for the city of Gillette, and (3) the enterprise fund accounts for the city of Gillette and the Campbell County School District. It also lists the accumulated totals, beginning from 1979. The complete tables for this information appear in the Appendix.

As Table 4-21 reveals, both Campbell County and the Campbell County School District are in a strong financial position. Both rely heavily on property taxes, and since most of the energy developments (e.g., coal mines, power plants) are located in the county, both the county and the school district capture much of the revenues resulting from the value of the raw ore and the equipment on the property. The city of Gillette, on the other hand, suffers doubly: first, because it receives very little of the inflated assessed values from the mines, etc.; second, because it has to provide much of the public services to these new residents. By 1990 the city's general fund account is expected to enjoy a $1.3 million surplus; however, this is a drastic reduction from the 1984 estimate of $5.5 million. Furthermore, the wastewater (and particularly water) accounts face a critical shortage of funds: by 1984 they will be $1.8 million in the red; by 1990 the deficit will have risen to $12.4 million. An equally disturbing problem involving the deficit in the water account is the anticipated price that would need to be charged in order to cover the cost of the enlarged water supply system. As described in the baseline section for the city of Gillette and the GPA, the financing mechanism for repayment of the water bonds requires estimated rates of $15 per 1000 gallons in the initial years, tapering off to $1.30 per 1000 gallons.

ETSI's share in all this is determined in the following manner. Two scenarios, with ETSI and without ETSI, were projected with respect to the general fund accounts for the county, the city, and the school district. Table 4-22 presents the results of this analysis. Although the school district would experience the largest impact if, as anticipated, it lost funds, its overall budget and surplus still would not be affected significantly. One of the principal reasons for this apparent loss is that although ETSI would contribute school children, it would not add substantially to the property tax base. However, the city of Gillette would experience a more critical loss; indeed, it already faces considerable deficits in the enterprise accounts.

In conclusion, the cumulative effect of ETSI and the other energy projects in the area would create disturbances both in the local economy and in the short-term housing market. Also, the city of Gillette would experience substantial economic hardships in attempting to repay the bonds for the expanded water and

TABLE 4-21

SUMMARY OF NET CUMULATIVE FISCAL IMPACT FOR CAMPBELL COUNTY, GILLETTE, AND CAMPBELL SCHOOL DISTRICT (WITH ETSI)

	1984 ($1000)	1990 ($1000)
Campbell County		
Expenses	14719	27059
Revenues	18196	32936
Surplus/Deficit		
Annual	3477	5877
Cumulative	8438	40363
Gillette		
General Fund		
Expenses	7532	12976
Revenues	8084	10918
Surplus/Deficit		
Annual	552	-2058
Cumulative	5519	1253
Solid Waste		
Expenses	1091	2122
Revenues	1283	4839
Surplus/Deficit		
Annual	193	2718
Cumulative	-156	8950
Water		
Expenses	3395	4853
Revenues	2235	2662
Surplus/Deficit		
Annual	-1168	-2192
Cumulative	-1799	-12383

TABLE 4-21 Continued

SUMMARY OF NET CUMULATIVE FISCAL IMPACT FOR CAMPBELL COUNTY, GILLETTE, AND CAMPBELL SCHOOL DISTRICT (WITH ETSI)

	1984 ($1000)	1990 ($1000)
Sewer		
Expenses	6193	1580
Revenues	5091	960
Surplus/Deficit		
Annual	-1118	-620
Cumulative	472	-1277
Power		
Expenses	7521	14954
Revenues	8152	16458
Surplus/Deficit		
Annual	632	1504
Cumulative	1517	8346
Campbell School District 1		
Expenses	33094	64304
Revenues	58523	122012
Surplus/Deficit		
Annual	25429	57708
Cumulative	60903	300124

TABLE 4-22

NET FISCAL IMPACT OF ETSI PROJECT

	With ETSI	Without ETSI	Net Fiscal Impact of ETSI
Campbell County			
1984	3477	3534	-57
1990	5877	5913	-36
Cumulative Impact (1984 through 1990)			+69
Gillette (General Fund Account)			
1984	552	495	+54
1990	(2058)	(1917)	-141
Cumulative Impact (1984 through 1990)			-258
Campbell County School District			
1984	25429	27184	-1755
1990	57708	58750	-1042
Cumulative Impact (1984 through 1990)			-6360
Net Cumulative Impact of ETSI			-6549

wastewater facilities. Finally, although ETSI would not contribute directly to the anticipated losses, it would share a burden in these losses; proportionally, therefore, it should share any attempt to mitigate either the financial or social hardships faced.

SOCIOECONOMIC IMPACT SUMMARY: CAMPBELL COUNTY - GILLETTE PLANNING AREA

Baseline Conditions - Proposed Alternatives

Campbell County experienced an earlier energy boom. It is now in the midst of another and more substantial growth. It is the focal point of coal developments because (1) Gillette is a major socioeconomic center of Northeast Wyoming, and (2) much of the coal is mined in South Campbell County.

Population nearly doubled from 1970 to 1980 (13,000 to 24,000) and is expected to approach 45,000 by 1984.

Project Components and Activities

Site of construction and operation of major ETSI facilities:

- Three preparation plants; peak construction to 450; peak employment 1983-84
- Water supply/slurry lines construction; peak employment of over 350; 1983
- Mainline construction; temporary work crew of 670; fourth quarter of 1984
- Peak employment construction; work crew will approach 800 to 1000 during 1984

Social and Economic Effects

(Changes in local conditions due to ETSI and significance)

Construction. Because of the projected base of 45,000 people, ETSI is not anticipated to cause additional significant impact to Campbell County, Gillette Planning Area (GPA), or Gillette. This is primarily

because (1) population and economic base will have grown large enough to absorb increase due to ETSI, and (2) communities are anticipating overall increase and have expanded or planned to expand most facilities to accommodate growth. Therefore, no significant overburden of service.

Operation. Work crews associated with preparation plant operation will not significantly affect local communities: (1) Total operating work crew will be 243 over all four counties, one-quarter of peak construction crew, and (2) permanent workers will, in effect, replace construction crews. Consequently, no impact.

Cumulative Effects

However, the anticipated area-wide growth will induce substantial cumulative impacts, and ETSI, as a part of this increase, shares in the cause of such impacts: (1) Overall population is projected to nearly double in five years, (2) community is preparing for growth, but to do so has doubled to tripled capacity of existing facilities, thereby causing added financial burdens to the city of Gillette, (3) there will likely be substantial short-term housing problems, (4) there may be some long-term sociocultural changes, but uncertain as to net effect, and (5) GPA will experience considerable growth pains.

Cumulative Effects on Converse County

Significant cumulative effects would result from the combined existing, planned, and proposed energy developments in Converse County over the next five years. During that period, population is expected to increase by 40 percent. The communities of both Douglas and Glenrock are preparing for this increase with expansion plans for wastewater and water facilities.

However, the net incremental impact caused by ETSI-related population and demand for services would not be as significant, in terms of either the overall increase or ETSI's "share" of the added 40 percent. That is, added population from ETSI to the estimated 1984 population would be about 0.5 percent: ETSI's added population to the change in population from 1979 to 1984 could be as little as 1 percent (Table 4-23).

SOCIOECONOMIC IMPACT SUMMARY: CONVERSE COUNTY

Baseline Conditions

County has experienced considerable growth from coal and uranium development. Population has gone from 5900 in 1970 to 15,400 in 1979. It is expected to continue this growth at a slightly lower rate.

Project Components and Activities

Principal ETSI project component in county is minimal: 5 miles of pipeline. However, there will be some impact in terms of people working on ETSI project components and residing in Converse County.

Social and Economic Effects:

(Changes in local conditions due to ETSI and significance)

Construction. Do not anticipate any significant impact.

- Temporary pipeline construction workers 4.4%
- Increase in population of fixed-site workers less than 1%
- Do not anticipate any problem in the provision of water, wastewater, or school facilities.

Operation. Do not anticipate any significant impacts from permanent work force.

Cumulative Effects

Growth resulting from combined energy developments will be significant. Population could increase by 40 percent in five years. Cost of the resulting increase in public services would be substantial. By and large, the farmers of Douglas and Glarrade could be bearing negative fiscal balances. Short-term housing could also be a problem.

TABLE 4-23

CUMULATIVE SOCIOECONOMIC IMPACTS FOR CONVERSE COUNTY

Impact Summary Social/Economic Indicators	Baseline Existing 1979	Baseline Projected 1984	Baseline Projected 1990	Construction Impacts	Construction Impacts Number	Construction Impacts % Change (over 1984)	Operation Impacts Number	Operation Impacts % change (over 1990)	Cumulative Impacts Number 1984	Cumulative Impacts Number 1990
Employment										
Countywide Estimates	5,932	7,600	8,400						7,600	8,400
o Fixed Site (assumes all nonlocal)				peak	38	0.5	26	0.3		
o Mobile Pipeline (assumes all local)					536	7.1				
Population - Converse Co.	13,400	14,700 - 18,700	15,600 - 21,800	fixed pipeline	78 750	0.5 4.0	fixed 53	0.3	14,800 - 18,800	15,600 - 21,800
Housing/Households										
Converse Co. - Permanent	4,700	5,900	6,600		33	0.6	21	0.3	5,900	6,600
Temporary					461	7.8				

TABLE 4-23 Continued

	Existing Baseline		1984 Baseline		1990 Baseline	
	Douglas	Glenrock	Douglas	Glenrock	Douglas	Glenrock
Population	8,500	2,900	9,400	4,700	9,800	?
Public Service						
Waste Water						
Supply to serve pop.	1,900		18,000	6,200	18,000	6,200
Demand	-8,500		-9,400	4,700	-9,800	
Capacity	-6,000		+8,600	+1,500	+8,200	
Service Quality	Inadequate	Adequate	Excess Capacity	Excess Capacity	Excess Capacity	
Water						
Supply	8,500		10,000	10,000	10,000	
Demand	8,500	2,900	9,400	4,700	9,800	
Capacity	0		+ 600	5,300	+ 200	
Service Quality	Barely Adequate	Adequate	Excess Capacity	Excess Capacity	Barely Adequate	
Schools						
Supply	3,425	1,630	Future enrollment uncertain, however, there			
Demand	1,951	980	appears to be sufficient capacity for another			
Capacity	1,474		2,100 students (70 percent over 1978 enrollments)			
Service Quality	Excess capacity	Excess capacity				

Property Tax Base	ETSI Project Component Assessed Value	Mill Levy ($/$1000 AV)	Property Tax Revenues	1979 County Assessed Value	Property Tax Revenues	ETSI Inc. to County 1980 Property Tax Base
	1,588,000	63,047	100,000	$227,652,906	$14,353,000	0.7%

Cumulative Effects on Weston County

While Weston County is expected to attract some of the ETSI-related workers to Newcastle and possibly Upton, the county as a whole is not expected to be significantly affected either by ETSI or the cumulated increase in population and employment. This conclusion is based on a comparison of the increased population from ETSI to the total projected baseline (Table 4-24).

However, it is recommended that ETSI should monitor the relative growth patterns in Weston County to determine whether the cumulative impacts would significantly affect population or the provision of public services. This monitoring should be done in conjunction with the other energy companies, via either the Wyoming Industrial Siting Council or the Department of Economic Planning and Development.

SOCIOECONOMIC IMPACT SUMMARY: WESTON COUNTY, NEWCASTLE, UPTON

Baseline Conditions

Weston County has its own economic base, separate from recent energy developments. However, it serves as a "bedroom" community to Campbell County workers. As a result, population has slowly increased from 6300 to 7900 between 1970 and 1979. Much of the increase has taken place in Newcastle and Upton.

Project Components and Activities

Only about 12 miles of the ETSI project components (pipeline) will be located in Weston County. The impact will come from ETSI workers living in Newcastle and possibly Upton.

Social and Economic Effects

(Changes in local conditions due to ETSI and significance)

Construction. Do not anticipate any significant impact from ETSI. ETSI-related population will increase the countywide population by 2.3 percent, and the population for Newcastle by 4.3 percent. Both communities are planning on expanded public services (wastewater, water).

Operation. ETSI operating employment will be insignificant. Increase to population of county, 1.5 percent, increase to population of Newcastle, 3.4 percent.

Cumulative Effects

There do not appear to be any significant cumulative effects. While the towns are planning a "desired" population growth, it is uncertain as to the real increase they might receive.

TABLE 4-24

CUMULATIVE SOCIOECONOMIC IMPACTS FOR WESTON COUNTY

Impact Summary Social/Economic Indicators	Baseline Existing 1979	Baseline Projected 1984	Baseline Projected 1990		Construction Impacts Number	Construction Impacts % Change (over 1984)	Operation Impacts Number	Operation Impacts % change (over 1990)	Cumulative Impacts Number 1984	Cumulative Impacts Number 1990
Employment										
Countywide Estimates	3,346	3,800	4,400						3,900	4,500
o Fixed Site (assumes all nonlocal)					107	2.8	86	2.0		
o Mobile Pipeline (assumes all local)					-	-	-	-		
Population - Weston County	7,900	8,700	10,000	fixed	216	2.5	170	1.7	8,900	10,200
Newcastle	3,900	5,000	6,000			4.3	170	2.8		
Housing/Households										
Newcastle	2,700	2,900	3,400	fixed	92	3.1	68	2.0	3,000	3,500

TABLE 4-24 Continued

	Existing		1984		1990	
	Newcastle	Upton	Newcastle	Upton	Newcastle	Upton
Population	3,900	1,500	5,000	2,500-5,000	5,000	2,500-5,000
Public Service				more like 2,500		
Wastewater						
Supply	1,000		Both Newcastle and Upton are planning			
Demand	3,900		to expand and upgrade the sewer treat-			
Capacity	-2,900		ment plants but neither community has			
Service Quality	inadequate	inadequate	determined the design capacity.			
Water						
Supply						
Demand			3,900-5,000	2,500-5,000		
Capacity			Appears to	Appears to		
Service Quality	adequate	adequate	be adequate	be adequate		
Schools				to 2,500 pop		
Supply	1,660	600	1,660	600		
Demand	1,290	426	1,660	-830		
Capacity	370	174	0	-230		
Service Quality	Excess capacity	Excess capacity	Adequate	inadequate- system will need to be expanded		

Property Tax Base	ETSI Assessed Value	Mill Levy ($/1000 AV)	Property Tax Revenue	1979 County A.V.	Property Tax Revenue	ETSI Inc. to County 1979 Property Tax Base
Weston County	4,061,000	62.936	256,000	57,294,304	3,606,000	7.1%

Cumulative Effects on Niobrara County

In terms of relative increase to population, the combined effect of construction workers and the associated nonbasic sectors would have a significant impact on the economy, population, and housing in Niobrara County (Table 4-25). ETSI-related employment would add close to 14 percent to the projected 1984 base; the ETSI-related population (including service sectors) of 405 people would add nearly 20 percent to the projected population for the town of Lusk (1900 projected population). On the other hand, the location of some major ETSI project components (e.g., the Niobrara well-field wells and pump station, the water supply lines, and a large portion of the main slurry pipeline) would increase and greatly improve the local tax base. It is estimated (Table 4-25) that ETSI would add $1.3 million in property taxes to a 1980 base of 2.53 million--over a 50 percent increase.

TABLE 4-25

CUMULATIVE SOCIOECONOMIC IMPACTS FOR NIOBRARA COUNTY

Impact Summary Social/Economic Indicators	Baseline Existing 1979	Baseline Projected 1984	Baseline Projected 1990		Construction Impacts Number	Construction Impacts % Change (over 1984)	Operation Impacts Number	Operation Impacts % change (over 1990)	Cumulative Impacts Number 1984	Cumulative Impacts Number 1990
Employment	1,429	1,450	1,500						1,600	1,500
Fixed-Site (assumes all nonlocal)					202	13.9	20	1.3		
Mobile Pipeline (assumes all non-local					536	37.0				
Population Niobrara Co.	3,132	3,200	3,300	Fixed	405	12.7	40	1.3	3,600	3,300
				Pipeline	750	23.4				
Housing/Households				Fixed	405	21.3	40	1.7	2,250	2,000
				Pipeline	750	39.4		2.1		
Niobrara Co.	1,160	1,185	1,222							
Lusk	650	700	740	Fixed	173	24.7				
				Pipeline	461	65.9	16	2.3	900	750

TABLE 4-25 Continued

	Existing Lusk	1984 Lusk	1990 Lusk
County	3,132	3,200	3,300
Population	1,750	1,900	2,000
Public Service			
Wastewater		to serve	
Supply	-	3,000 pop.	3,000
Demand	1,750	1,900	2,000
Capacity	Insuff. capacity	+1,100	1,000
Service Quality	Inadequate	Excess capacity	Excess capacity
Water		to serve	
Supply		3,500 pop	3,500
Demand	1,750	1,900	2,000
Capacity		+1,600	+1,500
Service Quality		Excess capacity	Excess capacity
Schools			
Supply	750	750	750
Demand	561	580	600
Capacity	+189	+170	+150
Service Quality	Excess capacity	Excess capacity	Excess capacity

Property Tax Base	ETSI Assessed Value	Mill Levy ($/$1000 AV)	Property Tax Revenues (1980 Dollars)	1980 County Assessed Value	Property Tax Revenues 2,508,000	ETSI Inc. to 1980 Property Tax Base
Niobrara County	21,709,000	60,833	1,321,000	41,587,703	2,530,000	52.2%

SOCIOECONOMIC IMPACT SUMMARY: NIOBRARA COUNTY

Baseline Conditions

Niobrara County has experienced some growth over the past 10 years (3132 people in 1979), but on the whole, the county's economy has not grown to any significant degree between 1970 and 1979. Other than recent oil developments, the county remains basically reliant on agriculture and some residential overflow from Converse County.

Project Components and Activities

ETSI project components in Niobrara County will be substantial.

- Niobrara well field--41 peak construction workers to drill wells
- Niobrara well-field pump station--23 peak construction workers
- Two main-slurry-line pump stations--68 peak construction workers
- Mainline construction crew--670 peak construction work crew, fourth quarter, 1984.

Social and Economic Effects

(Changes in local conditions due to ETSI and significance)

Construction. Total construction workers will significantly affect the county's, and in particular the town of Lusk's, economic and population base (1979 population of 1750 people). Population generated (350) from fixed-site peak construction workers would increase the town's population by 21.3 percent (for 1 to 2 years); temporary workers from the mainline construction crew would increase

population by 34.2 percent. This assumes that all people new to the area will locate in Lusk.

Operation. In the long run, the impact of permanent workers in the county would not be significant; ETSI-associated population would be 2.1 percent.

Cumulative Effects

Much of the future growth in Niobrara County is assumed to be ETSI-related. As indicated, there would be substantial increases to population, but this is relatively short term (1 to 2 years). The town, however, is considering expanding wastewater and water facilities to serve 3000 people. As a result, there should be sufficient capacity.

The main advantage of ETSI would be in a considerable boost to the property tax base. The assessed value of ETSI components in the county, calculated to be over $21.7 million, would increase the county's 1980 assessed value of $41.6 million to $63.3 million. Property taxes collected in 1980 amounted to about $2.5 million; ETSI components would increase revenue 52.2 percent, or another $1.3 million.

COMPARISON OF IMPACTS RESULTING FROM PROJECT ALTERNATIVES

This section compares the potential changes to each of the local communities under the various project alternatives. The shift from the proposed alternative to either the market or the pipeline/barge alternative would not significantly affect the communities. This conclusion is based on the following:

- The shift from the proposed alternative to either the market or the barge alternative would cause a greater volume of coal to be processed and sent from the North Antelope preparation plant and a correspondingly lesser amount to be processed and sent from the Jacobs Ranch plant (Table 4-26).
- This shift would change the manpower loads for both construction and operation personnel from Jacobs Ranch to North Antelope.
- As a result, there would be a shift in the projected population from the lower Campbell County region to the middle region. That is, population would increase from a base of 1297 people in the GPA to 1439 people under the market alternative, and to 1468 under the barge alternative. These estimates do not represent any significant increase in population. In terms of percentages, ETSI-related population would increase from 4.1 to 4.7 percent (Table 4-27). More detailed information regarding the structuring of this table may be found in the Appendix.

The coal-cleaning alternative, which requires a 25 percent increase in construction and operation crews for the preparation plants, would not significantly increase overall effects for most of the communities. Campbell, Weston, and Converse counties would experience little significant increases in population growth.

Crook County Well-Field Alternative

In addition to the other alternatives (market, barge, and coal-cleaning), there is also the possibility that the ETSI system would rely on water drawn from a well field in Crook County rather than in Niobrara County, as described in the proposed alternative. This well field is located about 40 miles northeast of Gillette, Wyoming (Map 4-1). Its estimated discharge rate is twice that of the proposed Niobrara well field. Therefore, estimates of peak manpower and time required to construct the well field could be half of that estimated for the Niobrara well field.

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TABLE 4-26

PRODUCTION LEVELS FOR DIFFERENT ALTERNATIVE CONFIGURATIONS (TONS PER YEAR)

	Proposed Alternative	Market Alternative	Pipeline/Barge Alternative
North Rawhide	5	13.1	18.9
Jacobs Ranch	22.4	14.3	8.5
North Antelope	10.0	10.0	10.0
Total	37.4	37.4	37.4

TABLE 4-27

SUMMARY OF COMPARISON OF PROJECT ALTERNATIVES CONSTRUCTION

Population	1984 Baseline	Without Coal Cleaning			With Coal Cleaning		
		Proposed Alt.	Mkt. Alt.	Barge Alt.	Proposed Alt.	Mkt. Alt.	Barge Alt.
Campbell County							
GPA -	31,700	1,297	1,439	1,468	1,461	1,653	1,685
Percent Increase		4.1	4.5	4.6	4.6	5.2	5.3
Converse County	14,700 - 18,700	78	78	78	92	92	92
percent increase (based on low projections)		0.5	0.5	0.5	0.6	0.6	0.6
Weston County							
County	8,700	216	167	138	273	208	173
Newcastle	5,000	4.3	3.3	2.8	5.5	4.2	3.5
percent increase of Newcastle pop.							
Niobrara County							
County	3,200						
Lusk	1,900	405	405	405	465	463	463
percent increase of Lusk pop.		21.3	21.3	21.3	24.4	24.4	24.4

Since 100 workers would be required to complete the facilities in Niobrara County, it is assumed that only 50 workers would be needed in Crook County. Generally, all workers are expected to migrate to the region and settle principally in Crook County.

The net effect on housing, population, and public services would not be significant. As found in Table 4-28, total construction-related basic and non-basic employment would increase by 80 or 3.2 percent and the county's population would increase by 161 people or 2.7 percent. Similarly, the impact on the individual communities is not expected to be significant since it is assumed that most of the newcomers would probably prefer the larger communities of Sundance (1977 population of 2500) and Moorcroft (1978 population of 1200), rather than smaller communities such as Hulett (1978 population of 340).

Since each of these communities already has adequate water and sewer capacity, the small increase in population would not be likely to affect the water quality.

SUMMARY AND FINDINGS

The potential socioeconomic impacts of the construction and operation activities of the ETSI pipeline and the subsequent overall cumulative impacts of all the energy-related projects in the Wyoming area have been analyzed in this section. Employment (basic and nonbasic) and population, housing, and public services (wastewater, water, and schools) constitute the key socioeconomic factors examined.

The following conclusions were drawn from the analysis:

- Although ETSI would have some impact on all four counties studied in the proposed alternative, construction and operation of the ETSI pipeline facilities would most significantly affect Niobrara County, in particular the town of Lusk. The county's overall property tax base, which was over $2.5 million in FY 1980, would be improved by $1.3 million (52 percent) with the inclusion of the assessed values for the

TABLE 4-28

ETSI-RELATED IMPACTS ON CROOK COUNTY

	Baseline			ETSI Related	
	Existing (1979)	Projected 1984	1990	Employers	Percent Increase
Crook County					
Employment	2339	2500	2750		
Fixed-Site				70-112	2.8%-4.5%
Permanent				20	0.7%
Population	5661	6000	6700		
Fixed-Site				147-232	2.4%-3.9%
Permanent				43	0.6%
Housing	2000	2100	2400		
Fixed-Site				63-100	3.0%-4.8%
Permanent				17	0.7%

pipeline, wells, and pump station to the tax rolls. The construction of the Niobrara well field and pump station would add approximately 365 people (20 percent) to the town of Lusk during the peak period (second quarter 1984). Lusk has a projected 1984 population of 1900 people. Because the pipeline-related facilities are located in the county but outside of Lusk, the town would receive little of the increased tax revenues but much of the increased population. However, since the construction period lasts only two years, the population increase is only short term. In addition, while the 20 percent increase in population may appear to be large, the net effect on the provision of public services may not be substantial.

- Although ETSI by itself would not significantly affect the other communities, the cumulative effects of the existing, planned, and proposed energy developments in the region (e.g., coal mines, uranium mines and mills, power plants, and transportation facilities--including ETSI) would cause many of these communities to grow substantially. For instance, as a result of the developments the current population in the Gillette Planning Area would increase from 18,600 to 31,700 by 1984.

- The most significant of these effects would be fiscal. Most of the communities have monitored the permit applications of these energy companies; aware of the potential boom, they have been preparing for the increased activities by expanding water and wastewater treatment facilities and planning and building new schools. The problems, however, involve financing of these facilities, and the fiscal deficits faced by these communities. For example, it is projected that by 1990 the city of Gillette will have an accumulated general fund deficit of $250,000. The impact of new developments and population effectively has shifted from population, employment, and public services to the cost of providing services and the net fiscal balance.

- The shift from the proposed alternative to the market or the barge alternative would not significantly affect the baseline socioeconomic

conditions, nor would the increase of employment from the coal-cleaning alternative.

CHAPTER FIVE
DEWATERING PLANTS

INTRODUCTION

Construction and operation of the dewatering plants would stimulate local area economies and create direct construction and operation employment, which could in turn lead to in-migration of workers, creation of secondary employment, and local population increases. Following the procedures set forth in the Methods section, a common set of assumptions was used to estimate potential employment and population effects that would occur in each area as a result of construction and operation of the dewatering plant, the pipeline segments, and the pump stations. The assumptions and procedures listed below were used to project impacts for each of the dewatering plant areas.

Construction

The following assumptions were used to estimate employment and population changes that would result from construction of dewatering plants:

- Peak construction work force

  Potential effects were based on the estimates of peak construction manpower provided by ETSI. An average work-force value might be more representative, but the peak manpower demand was chosen to yield conservative, worst-case estimates of employment and population changes.

- Mix of local and nonlocal construction workers

  The assumed mix of local and nonlocal construction workers for the dewatering plants was in each case a judgment based on a review of the local labor force--specifically, the size of the local construction labor pool and its ability to provide the required construction work force at the dewatering plant site. Where available, information on the experience of other construction projects in the area was reviewed to determine a reasonable value for the mix of local/nonlocal construction workers.

- Ratio of secondary to direct employment (secondary employment multiplier)

  The ratio of secondary to direct employment was assumed to be 0.6 for all the dewatering plants. According to HUD (1976) the ratio, or secondary employment multiplier, for large energy projects ranges from 0.3 to 0.9 for the construction phase. A multiplier of 0.6 was selected as a median value, in part because most of the sites are reasonably close to large construction labor pools and cities with developed infrastructures and service economies.

- Population increase

  Construction-associated population increases in the area surrounding a dewatering plant would be a function of the number of nonlocal construction and secondary service workers (if any) who move into the area, the ratio of single workers to those accompanied by families, and the average size of those families. Adopting values identified by HUD (1976), it was assumed that 40 percent of the in-migrant workers would be single, 60 percent would be accompanied by

their families, and the average size of in-migrant families would be 3.7 persons.

Estimates of pipeline construction effects in the following dewatering plant affected areas are based on procedures used to estimate employment, population, and housing impacts of pipeline construction; these are presented in the introduction to Chapter VI.

Operation

The following assumptions were used to estimate employment and population changes that would occur in the areas surrounding the dewatering plant sites at the beginning of the operation phase:

- Direct operation work force

  Estimates of manpower requirements were supplied by ETSI.

- Mix of local and nonlocal operating and service personnel

  In the absence of detailed analysis of the capability of each local labor force to provide persons with the requisite skills, it was assumed that all new direct permanent positions would be filled by nonlocals who would relocate to the area. This assumption necessarily overstates the potential effects but provides conservative worst-case estimates of employment and population effects.

  For most of the dewatering plant areas it was assumed that new permanent secondary jobs would be taken by persons already residing in the area. The exception is the Cypress Bend area, which is predominantly rural; also, the dewatering plant would have a larger operational work force than the other plants. For Cypress Bend it was assumed that

80 percent of the new service jobs would be taken by nonlocals, a value adopted from HUD (1976, p. 5).

- Secondary employment multiplier

  A secondary employment multiplier of 1.1 was adopted from HUD (1976, p. 5) for all dewatering plant areas.

- Population increase

  Adopting the values cited in HUD (1976), it was assumed that 40 percent of the in-migrant (nonlocal) permanent workers would be single, 60 percent would have families, and average family size would be 3.7 persons. For in-migrant permanent secondary employment (expected only at the Cypress Bend site and area) typical values presented in HUD (1976) were adopted. It was assumed that 50 percent of nonlocal secondary workers would be single, 50 percent would have families, and average family size would be 3.7 persons.

5.A PONCA CITY: AREA 6

The Ponca City dewatering plant is included only in the proposed action. Under the market or pipeline-barge alternatives, no project facilities would be located in the Ponca City study area. Instead, the main slurry pipeline would follow another route to the northeast.

LOCAL STUDY AREA

The Ponca City dewatering plant site is located 15 miles south of Ponca City, Oklahoma, in Noble County (which is adjacent to Pawnee County). The local study area is defined as Grant, Kay, Noble, Pawnee, and Payne counties (Figure 5-1 and Map A-15). Kay, Noble, Pawnee, and Payne are the principal counties that would be affected by construction of Sooner Generating Station Units 1 and 2, according to the Draft EIS (EPA Region VI 1979).

BASELINE CONDITIONS

Population and Employment

The population of all four counties was 126,311 in 1975. The communities of Ponca City, Pawnee, Perry, and Stillwater are within 25 miles of the site; the combined population of these four cities approaches 70,000. Enid is 50 miles from the site, and Tulsa is about 80 miles away (Table 5A-1).

The total number of employed persons in the northwest and central labor regions of Oklahoma was 77,075 and 41,742, respectively, in 1976 (Table 5A-2). In the same year, contract construction employment for the northwest region was 2478, or 3.21 percent of total employment; for the central region it was 913, or 2.18 percent of total employment (Oklahoma Employment Security Commission 1978). The figures for both regions combined made a total of 3391 employed construction workers. This 1976 figure is projected to grow to 3803 in 1981.

Housing

Rental houses and apartments are available in Ponca City, Stillwater, and Pawnee (Table 5A-3).

Ponca City has 600 hotel and motel rooms (Ponca City Chamber of Commerce 1980). There are 350 rental houses or apartment units, and some 200 rental housing units are planned or under construction. Four mobile home parks have a total of 500 spaces, of which some 40 are vacant. An additional 26 mobile home spaces are planned for construction. The rental vacancy rate in Ponca City is approximately 2 to 3 percent (Ellingwood 1980).

Public Services

Ponca City's public services are not currently under stress, but in the future the water supply will have to be expanded (Ellingwood 1980).

PROJECT COMPONENTS

The ETSI project components in this area are:

- The 46-inch main slurry pipeline through Grant, Kay, Noble, and Pawnee counties
- The Ponca City dewatering plant (6.6 MMTA) and mainline pump station No. 8 at the dewatering plant site

ETSI PROJECT IMPACT ON PONCA CITY STUDY AREA

Construction

Schedule and Personnel. The dewatering plant would be constructed in three stages. Construction would begin in the first quarter of 1983. The work force buildup would reach a peak of about 195 in the first quarter of 1984, fall off again in 1985, climb again to about 60

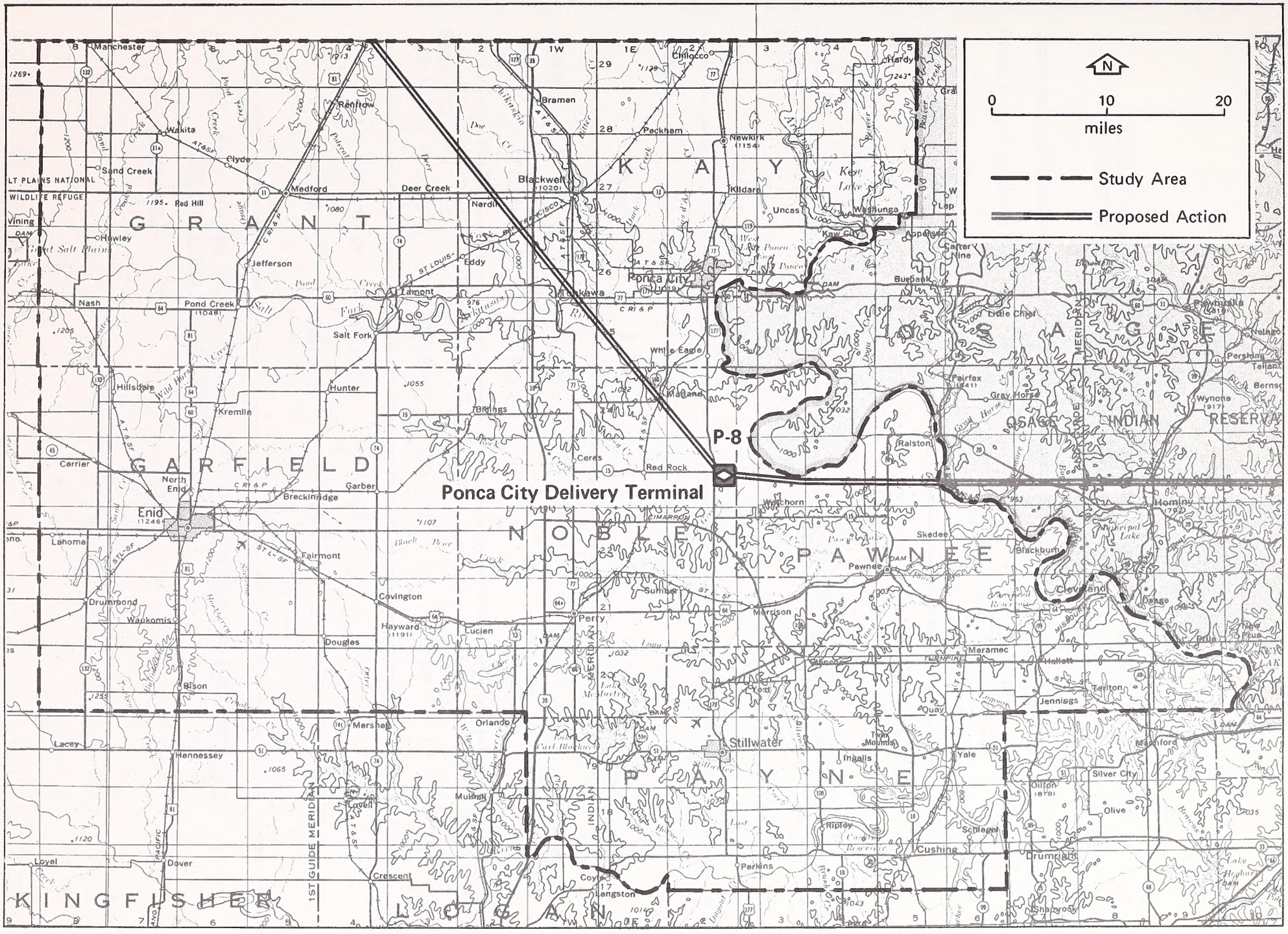

Figure 5-1. PONCA CITY LOCAL STUDY AREA

TABLE 5A-1
POPULATIONS OF COUNTIES & COMMUNITIES WITHIN COMMUTING DISTANCE OF PONCA CITY DEWATERING PLANT

County	Community	Census 1970 Population	1975 Population	Population Change 1970-1975 (%)	Approximate Distance from the site (miles)
Kay		48,791	47,825	-2.8	NA
	Ponca City	25,940	25,819	-0.5	15
Noble		10,043	10,524	3.8	NA
	Perry	5,341	5,469	2.4	25
Pawnee		11,338	13,128	13.4	NA
	Pawnee	2,443	2,299	-5.9	25
Payne		50,654	54,834	10.7	NA
	Stillwater	31,126	33,870	8.8	25
Four County Total		120,826	126,311	NA	NA
	Enid	46,634	48,030	3.0	50
	Tulsa	330,350	331,726	0.4	80

Source: U.S. Bureau of the Census, 1977. Population Estimates and Projections, Series P-25.

NA= Not Applicable.

TABLE 5A-2
CONSTRUCTION EMPLOYMENT, 1976-1981, NORTHWEST AND CENTRAL OKLAHOMA

	Total Employment 1976	1976 Construction Employment	Percent of Total Employment	1981 Construction Employment	Percent of Total Employment	76-81 Change (Employment)	76-81 Change (Percent)
Northwest Region[a]	77,075	2,478	3.21	2,781	3.21	303	12.22
Central Region[b]	41,742	913	2.18	1,022	2.18	109	11.93
Total	118,917	3,391	NA	3,803	NA	412	12.14

Source: Oklahoma Employment Security Commission, Occupational Information System Computer Printout, Northwest and Central Regions, Tables II 06/19/78.

[a]Northwest Region contains 16 counties but most non-agricultural employment is in Kay (Ponca City), Noble, and Garfield (Enid) counties.

[b]Central Region includes Payne, Pawnee, Logan and Lincoln counties.

NA = Not Applicable.

TABLE 5A-3
HOUSING AVAILABILITY IN PONCA CITY, STILLWATER, AND PAWNEE, OKLAHOMA

	Number of Dwellings	Owner Occupied (Percent)	Rental Housing Available	Rental Apartments Available
Ponca City	10,760	73	Yes	Yes
Stillwater	18,415	48	Yes	Yes
Pawnee	1,400	68	Yes	Yes

Source: Oklahoma Community Data Sheets for Ponca City, Stillwater, and Pawnee 1979.

through 1986, and fall off again at completion in 1987, when the full 6.6 MMTA capacity would be in place (Table 5A-4). Mainline pump station No. 8 at the Ponca City site would be constructed concurrently with the dewatering plant and completed by the fourth quarter of 1984.

Pipeline spread II would be responsible for constructing the 46-inch main slurry pipeline from Milepost 390 to Pryor, Oklahoma. If spread II started at the north and worked southward, the pipeline segments would be constructed north and south of the Ponca City site during the second quarter of 1984.

Oklahoma Gas and Electric Company would be constructing Sooner Power Plant Units 3 and 4 at roughly the same time as the dewatering plant, pump station, and pipeline. However, the peak manpower loading is projected to occur in September or October of 1985--at least a year after the peak manpower loading for the dewatering plant.

Population and Employment. Most of the construction workers for the Ponca City dewatering plant are expected to come from the local construction labor pool. These construction workers live in and around the nearby communities of Ponca City, Pawnee, Stillwater, and Perry. Some workers would commute daily from as far away as Enid (52 miles); some might come from Tulsa (80 miles away). The combined employment in contract construction in the northwest and central labor regions of Oklahoma is projected to be over 3800 in 1981 (Oklahoma Employment Security Commission 1978). Beyond the northwest and central labor regions are the large metropolitan areas of Oklahoma City and Tulsa.

Most of the construction work force is expected to come from the local area, and a few from Tulsa and Oklahoma City. This assumption is based on the availability of contract construction workers in the local area. There would be no sizable in-migration of nonlocal workers

TABLE 5A-4
CONSTRUCTION MANPOWER DEMAND, PONCA CITY SITE

	YEAR/QUARTER																			
	1983				1984				1985				1986				1987			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Dewatering Plant	7	46	88	139	156	132	95	45	5	20	38	60	60	60	56	60	57	40	18	
Mainline Pump Station No. 8		20	49	49	39	39	38	30												
ETSI Fixed - Site Total	7	66	137	188	195	171	133	75	5	20	38	60	60	60	56	60	57	40	18	
Main Slurry Pipeline						670														
Oklahoma Gas and Electric Company Sooner Units 3 & 4*									Sooner Units 3 & 4 Peak Manpower 900 workers Sept/Oct 1985				Sooner Unit 3 Commercial Start-up May 1986				Sooner Unit 4 Commercial Start-up May 1987			

*Source: Tyree 1980.

to the area to work on this project, and no significant population increase. Since construction workers are not expected to relocate to the area, no significant secondary jobs would be created by the construction of the Ponca City dewatering plant (Table 5A-5).

Assuming a local/nonlocal ratio of 50/50, about 335 nonlocal mobile pipeline construction workers would be in the area in the second quarter of 1984. The total nonlocal transient population of pipeliners and family members would be about 435 (Table 6-3).

Housing. While housing has been tight (2 to 3 percent rental vacancy rate in Ponca City), no significant socioeconomic problems have been observed in Ponca City or other communities as a result of the 1100-worker peak force on Units 1 and 2 of Sooner Generating Station in 1978 or 1979 (Oklahoma Gas and Electric Company 1980). Because the construction labor demand for the dewatering plant is considerably smaller, no significant increase in housing demand is foreseen.

The mobile pipeline construction force is expected to demand approximately 200 transient or short-term housing units during the second quarter of 1984, when pipeline spread crew II is expected to construct the main slurry pipeline through the area. Since there were 600 hotel and motel rooms in the Ponca City area alone, as of 1980 the pipeliners should be able to find housing.

Public Services. The construction of the Ponca City dewatering plant is not expected to put any significant stress on local public services.

Operation

Personnel. Direct operation employment at the Ponca City dewatering plant is projected to be 46 persons (Table 5A-6).

TABLE 5A-5
EMPLOYMENT AND POPULATION INCREASES DURING
CONSTRUCTION, PONCA CITY DEWATERING PLANT

EMPLOYMENT	
Direct Employment	
Peak construction work force	195
x assumed percentage nonlocal (0)	
= nonlocal direct construction employment	0
Secondary Employment	
Nonlocal direct construction employment (0)	
x nonlocal secondary employment multiplier[2] (.6)	
= secondary employment (0)	0
secondary employment (0)	
x assumed percentage nonlocal[1] (0)	
Total Employment	195
POPULATION	
Nonlocal direct construction employment (0)	
x percents single (40%)[2]	
= nonlocal direct singles	0
Nonlocal direct construction employment (0)	
x percent with families (60%)[2] = (0)	
x average family size (3.7)[2]	
= nonlocal direct with family members	0
Nonlocal secondary employment (0)	
x percent single (50%)[2]	
= nonlocal secondary singles	0
Nonlocal secondary employment (0)	
x percent with families (50%)[2] = (0)	
x average family size (3.7)[2]	
= nonlocal secondary with family members	0
Total New Nonlocal Population	0

[1]Assumptions based on review of labor force availability and experience with other construction projects.
[2]Adapted from HUD 1976, p. 5.

TABLE 5A-6
ESTIMATED EMPLOYMENT AND POPULATION INCREASES DURING OPERATION, PONCA CITY

EMPLOYMENT	
Direct Operation and Maintenance Employment	46
• Assume 100 percent nonlocal as a worst case	
Secondary Employment	
Nonlocal direct employment (46)	
x secondary employment multiplier (1.1)	
= secondary employment	51
Nonlocal Secondary Employment	
Secondary employment (51)	
x assumed percentage nonlocal[2] (80%)	
= nonlocal secondary employment (41)	
Total Employment	97
POPULATION	
Nonlocal direct employment (46)	
x percent single[3] (40%) =	18
= nonlocal direct singles	
Nonlocal direct employment (46)	
x percent with families (60%) = (28)	
x average family size[3] (3.7)	
= nonlocal direct with family members	104
Nonlocal secondary emplcyment (41)	
x percent single (50%) =	
= nonlocal secondary singles	20
Nonlocal secondary employment (41)	
x percent with families (50%) (20)	
x average family size (3.7)	
= nonlocal secondary with family members	78
Total New Population	220

[1]Secondary employment multiplier adapted from HUD 1976, p.5.
[2]Mix of locals and nonlocals taking secondary employment adapted taken from HUD, 1976, p. 5.
[3]Percent single, percent with families and family size factors adapted HUD, 1976, p. 5.

Population and Employment. The 46 new direct jobs would stimulate some secondary employment. Using a multiplier of 1.1 secondary jobs for each new direct job, some 51 secondary jobs would be created in the area (i.e., Ponca City, Stillwater, Pawnee, and Payne).

Assuming the worst case--that all new direct permanent employment would be filled by nonlocals--an in-migrating population of about 122 persons could be expected (Table 5A-6). This new population would locate in Ponca City, Stillwater, Perry, and Pawnee. Assuming that 80 percent of the secondary employment was taken by nonlocals (also a worst-case assumption), an additional 98 nonlocals would move into the area, making a total new population of 220 persons. However, since the new population would be distributed throughout the area, it does not constitute a significant increase.

Public Services. No significant effects on local public services are expected as a result of operation of the Ponca City dewatering plant.

Public Finance. With the ETSI facilities, new property taxes would accrue to the counties and jurisdictions in the area (Table 5A-7).

Abandonment

Should the project be abandoned, the 46 direct jobs at the Ponca City dewatering plant would be eliminated. Property tax revenues, already reduced by the depreciation of the facilities, would decline towards zero.

CUMULATIVE EFFECTS

The Oklahoma Gas and Electric Company has several operational or planned power plant units at the Sooner Generating Station (the Ponca City site). Unit 1 came online in 1979. Unit 2 is scheduled for operation in 1980. The construction peak for Units 1 and 2 was 1100

Table 5A-7. ESTIMATES OF ETSI ASSESSED VALUATION AND PROPERTY TAX REVENUES AND COMPARISON WITH 1976-77 COUNTY ASSESSED VALUATIONS AND PROPERTY TAX REVENUES

State and County	Estimated ETSI Property Tax (1980 Dollars)[1] Estimated Assessed Valuation of ETSI Components (x 1000) (1)	Assumed Property Tax Rate (percent) (2)	Estimated Revenues (1980 Dollars) (x 1000) (3)	County Local Property Tax 1976-77 ($000s)[2] Assessed Valuation Subject to Tax (x 1000) (4)	Property Tax Revenues (5)	Evaluation of Estimated ETSI (1980$) Assessed Valuation and Revenues[3] Sum of ETSI AV (1980) and 1976-77 AV 1 + 4 (6)	ETSI AV (1980) as a Percentage of 1976-77 AV 1 ÷ 4 (7)	Sum of ETSI and 1976-77 Property Tax Revenues 3 + 5 (8)	ETSI Revenues as a Percentage of 1976-77 Property Tax Revenues 3 ÷ 5 (9)
Oklahoma									
Grant	12,200	1.46	180	32,920	1,953	45,120	37	2,133	9
Kay	25,900	1.63	420	102,196	7,486	128,096	25	7,906	6
Noble	29,000	1.62	470	27,852	1,785	56,852	104	2,255	26
Pawnee	19,000	1.69	320	20,667	1,160	39,667	92	1,480	28

[1] ETSI 1980. Estimated property taxes by county were estimated by ETSI for the EIS by extrapolating previously developed unit cost estimates for components and should in no way be construed as representing the cost estimate for the components. Values shown on this table were derived by ETSI as follows:

Sum of estimated cost of components in county X Statewide ratio of assessed value to market value = Assessed valuation of ETSI components X Property tax rate (percent) assumed for county = Estimated ETSI property taxes in 1980 dollars

[2] U.S. Bureau of the Census, 1977 Census of Governments.

[3] Column 6 is the sum of estimated ETSI Assessed Valuation (AV) as of 1980 and the 1976-77 total county assessed valuation (i.e., column 6 = column 1 + column 4).

Column 7 is the ratio of the ETSI AV to the 1976-77 total county AV expressed as a percent (i.e., column 7 = column 1 divided by column 4).

Column 8 is the sum of the estimated ETSI property tax revenues and the 1976-77 total county property tax revenues (i.e., column 8 = column 3 plus column 5).

Column 9 is the ratio of the estimated ETSI revenues to the 1976-77 total county property tax revenues expressed as a percent (i.e., column 9 = column 3 divided by column 5).

workers, and no significant community problems were observed (Oklahoma Gas and Electric Company 1980). Two additional units, Unit 3 and Unit 4, are in the planning stage; tentative commercial operation is scheduled for May of 1986 and 1987, respectively. The peak construction work force has been forecasted as 900 workers in the last quarter of 1985 (Oklahoma Gas and Electric Company 1980). The manpower peak for the combined dewatering plant and pump station construction would be about 195 workers in early 1984. This would occur prior to the 900-man peak of the Sooner Units 3 and 4 power plant. Manpower buildup is not known, but several hundred workers probably will be constructing the power plant units at the same time as the dewatering plant. The aggregate construction work force of these facilities would approach the 1100 peak experienced during construction of Sooner Units 1 and 2, but still be below it.

The construction of the Sooner Generating Station Units 3 and 4 as well as other industrial facilities in the Ponca City area (e.g., the new Huffy Bicycle Plant, which eventually will employ 1200 persons, and a large aqueduct) suggest that while the dewatering plant and slurry pipeline demands on local communities will be minor, they will contribute to cumulative demands in the area. Some potential cumulative effects are the bidding up of wages and a tight housing supply that is increasing the rents.

SOCIOECONOMIC IMPACT SUMMARY: AREA 6 - PONCA CITY
(Proposed Action Only)

Baseline Conditions

There is a construction labor pool of about 3800 in the area, and more in Tulsa and Oklahoma City. The area is experiencing industrial growth. The local housing market is tight (2 to 3 percent vacancy rate) in Ponca City.

Project Components and Activities

- 46-inch main slurry pipeline: construction work force 670 in second quarter of 1984.
- Dewatering plant (6.6 MMTA): peak manpower 195 in first quarter of 1984.
- Pump station: operation manpower 46; begin first quarter of 1985.

Social and Economic Effects

(Changes in local conditions due to ETSI, and significance.)

Construction. Fixed-site construction workers are expected to be mostly local with no measurable in-migration of nonlocal workers. Thus there will be no significant population increase, housing demand, or demand for public services--in short, no significant impact. Pipeliners will be in the area for two to four months, with no significant impact.

Operation. A minor and insignificant increase in the local population and stimulation of secondary service jobs will be caused by the 46 permanent employees. Significant property tax revenues will accrue to Grant, Kay, Noble, and Pawnee counties.

Abandonment. Abandonment of the project will result in the eventual loss of employment and tax revenues.

Cumulative Effects

There will be some other industrial growth in the area, including power plant units at the site. Some simultaneous population and employment growth may cause increases in wages paid, stimulation of housing construction, and increases in rents. However, this will not primarily be due to ETSI.

SOCIOECONOMIC IMPACT SUMMARY TABLE, PONCA CITY, OKLAHOMA, AREA (AREA 6) (Alternatives: proposed action only)

Social/Economic Indicator	Baseline Conditions	Construction Impacts	Operation Impacts
Employment	Northwest & central Oklahoma labor regions 1976 1981 Construction employment 3,391 3,803 Total Employment 118,917	Fixed-Site Peak: 195 (1st Qtr. 1984) Pipeline: 670 Local: 335 Nonlocal: 335 in 2nd qtr. 1984 5% of projected regional construction employment	Direct: 46 Secondary: 51
Population	1975 Ponca City 25,800 Stillwater 33,870 Four counties 126,311	Fixed-Site: No measurable increase in population Pipeline: total transient population 436 in 2nd qtr. 1984	Total: 220 0.8% of '75 Ponca City population. distributed to Ponca City, Stillwater, Pawnee insignificant.
Housing	1980 Ponca City rental vacancy rate: 2-3% 600 hotel/motel units in Ponca City alone.	Fixed-Site: No measurable increase demand for housing. Pipeline: Nonlocal pipeliners will require 200 transient housing units for 2-4 months in 2nd qtr. 1984.	No measurable effects.
Public Services	No stress on public services in Ponca City. Need to expand water supply in future.	No measurable effects.	No measurable effects.
Property Tax Base and Revenues			Estimated ETSI Revenues as a percentage of 1976/1977 Property Tax Revenues Grant County 9 Kay County 6 Noble County 26 Pawnee County 28

5.B PRYOR: AREA 7

Under the proposed action, a 3.0 MMTA dewatering plant would be built at the Pryor site only. Under the market alternative or the pipeline-barge alternative, a different affected area would be defined--a 5.3 MMTA plant would be built at the Pryor site and a 3.5 MMTA dewatering plant would be built at the Oologah site.

LOCAL STUDY AREA

The Pryor study area includes Osage, Washington, Rogers, Mayes, and Tulsa counties. The Pryor dewatering plant would be located at a site in Mayes County. While no project component would be located in Tulsa County, Tulsa is included since it is a major source of construction labor (Figure 5-2 and Maps A-16 and A-17).

BASELINE CONDITIONS

Population and Employment

The Pryor dewatering plant site is in Mayes County, about 40 miles from Tulsa. Communities near the site and their approximate distances from the site are listed in Table 5B-1. Total employment in the Tulsa SMSA, which includes Mayes County, was 245,524 in 1975; construction employment in the Tulsa SMSA was 8341 (Table 5B-2). Construction employment is projected to increase to 9400 by 1981.

Housing

An influx of construction workers has come to the local communities during the construction of Grand River Dam Authority power plant Unit 1 at the Pryor site and other projects in the area, especially

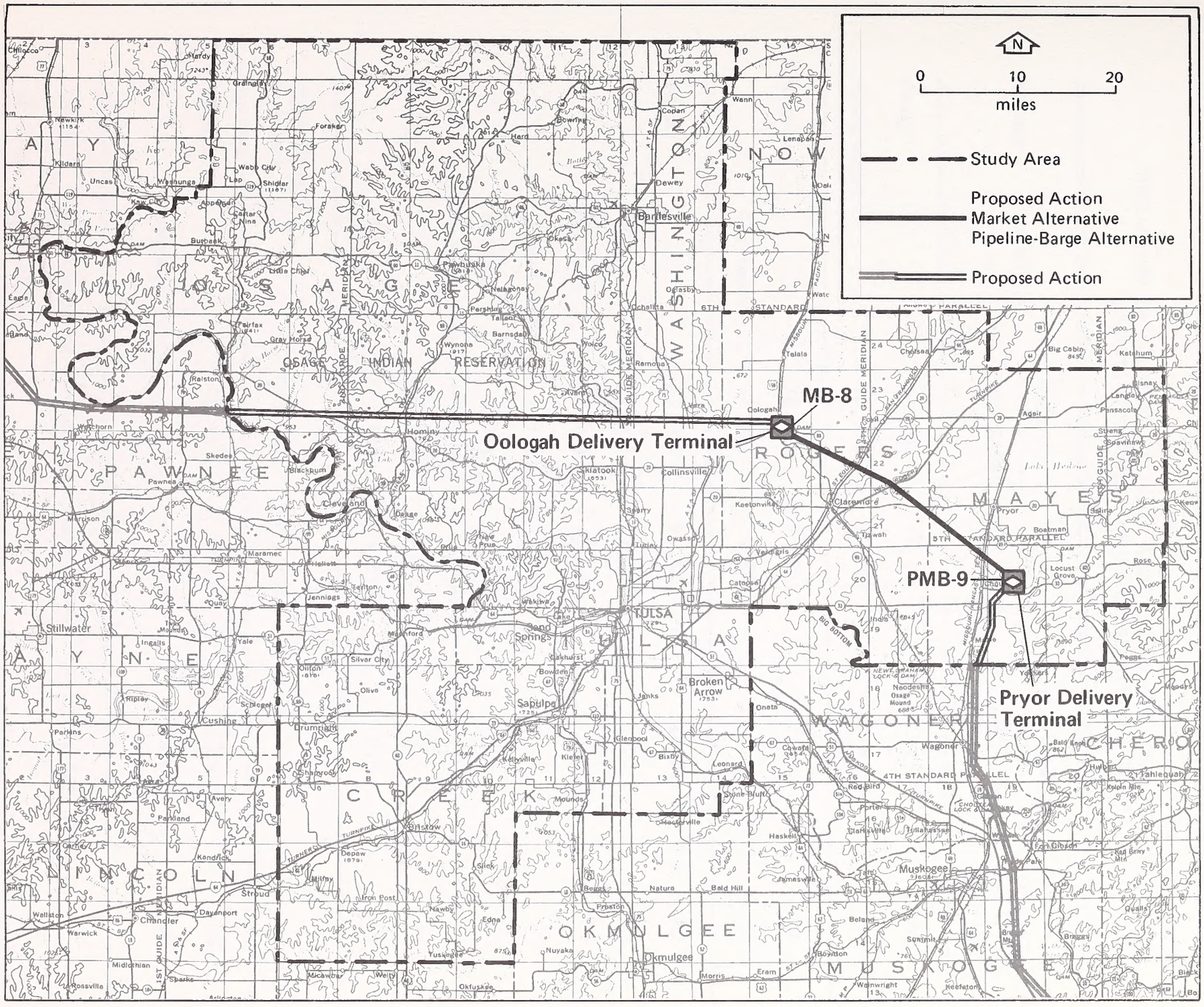

Figure 5-2. PRYOR LOCAL STUDY AREA

TABLE 5B-1
POPULATIONS OF COUNTIES IN LOCAL STUDY AREAS AND COMMUNITIES WITHIN COMMUTING DISTANCE OF PRYOR DEWATERING PLANT

County	Community	Census 1970 Population	1975 Population	Population Change 1970-75 (%)	Approximate Distance from the Site (miles)
Osage		29,750	31,390	7.4	NA
Washington		42,302	41,967	21.9	NA
Rogers		28,425	33,671	17.5	NA
	Claremore	9,084	9,897	8.9	25
Mayes		23,302	27,213	18.6	NA
	Pryor	7,057	7,797	10.5	15
	Choteau	1,046	1,192	14.0	5
	Locust Grove	1,090	1,142	4.8	10
	Salina	1,024	1,115	8.9	20
Tulsa		399,982	416,892	4.3	NA
	Tulsa	327,183	328,599	0.4	40
Five-County Total		513,761	551,133	7.2	NA
Wagoner		22,163	25,143	21.9	NA
	Wagoner	4,959	6,288	26.8	20

Source: U.S. Bureau of the Census, Series P-25, No. 684, May 1977.

NA = Not applicable.

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TABLE 5B-2
CONSTRUCTION EMPLOYMENT, 1976-1981, NORTHWEST AND CENTRAL OKLAHOMA

	1976 Total Employment	1976 Employment Construction Crafts Workers	1976 Percent of Total Employment	1978 Job Openings Construction Crafts Workers	1981 Total Employment	1981 Construction Crafts Workers	1981 Percent of Total Employment	1976-1981 Change	1976-1981 Change (Percent)
Tulsa SMSA[1]	245,524	8,341	3.39	487	288,890	9,399	3.25	1,058	12.68
Northeast Region[2]	80,377	2,272	2.82	139	91,509	2,586	2.82	314	13.82

Sources: Oklahoma Employment Security Commission, October 1978 Occupational Employment and Job Openings 1976-1981 Tulsa SMSA. June 19, 1978. Occupational Employment Statistics program computer printout for northeast Oklahoma. Table II, "Employment by Occupation, Northeast Oklahoma 1976-1981, and Table IV, "Job openings by Occupation, North Oklahoma 1978 Annual."

[1]Tulsa SMSA includes these counties: Orange, Tulsa Creek, Rogers, Mayes, and Wagoner.

[2]The northeast region includes these counties: Washington, Norton, Craig, Ottawa, Delaware, Cherokee, Adair, Okmulgee, Muskogee, Sequoyah, and Makintosh.

those in the Mid-America Industrial District. The availability of housing in communities near the Pryor dewatering plant site varies considerably from place to place. Pryor has an inventory of vacant houses and apartments. Two new apartment buildings with a total of 73 units are near completion, and a construction permit has been granted for an 80-unit apartment (Clack 1980). Locust Grove has a 30-unit apartment complex under construction. The Deputy Clerk for Locust Grove says, "We turn people away every day. People have to go to Tulsa for a place to live" (Mooney 1980).

Public Services

Pryor Creek has had no recent problems providing adequate public services. The water supply is adequate and the school district has just voted a bond issue for additions and improvements (Clack 1980). Locust Grove has no deficiencies in water supply. The sewer system needs to be upgraded, but no problems are foreseen about doing so (Mooney 1980). At Choteau, the town water, sewer, and gas systems all are being expanded. The construction of new facilities is being funded by a combination of federal grants and recently voted bond issues. The town clerk says, "Growth has caused financial strain on services, but we're doing everything we can" (Willis 1980).

PROJECT COMPONENTS

Under the proposed action, the ETSI project components in this area are:

- two 1.5 MMTA dewatering plant units
- mainline pump station No. 9, to be built at the Pryor site, and
- the 46-inch O.D. main slurry pipeline.

ETSI PROJECT IMPACT ON PRYOR STUDY AREA

Construction

Schedule and Personnel. The Pryor dewatering plant is scheduled to process 1.5 MMTA of coal for delivery, starting in the fourth quarter of 1984. To meet this schedule, construction would begin in the first quarter of 1982 (Table 5B-3). The dewatering plant construction would take two years and have a peak work force of about 156 workers. Plant capacity would be increased to 3.0 MMTA by the end of the third quarter of 1986. Since all the site and concrete work would be done in the initial construction period, the work force required for the additional 1.5 MMTA capacity would be considerably smaller than the initial work force.

Construction of the dewatering plant would fall between the construction of the two power plant units at the site. The Grand River Dam Authority (GRDA) is planning two 490 megawatt units (1 and 2). Unit 1 is presently under construction and is scheduled to go on line in July 1981. The schedule for Unit 2 is not firm, but the unit probably will begin construction in 1984 and go on line in July 1986.

The dewatering plant construction would take place after the completion upon construction startup of Unit 2, some time in 1983 or 1984. The peak labor demand for Unit 2 will be about 850 (85 percent of the 1000-worker peak for Unit 1). This peak of 850 will occur in the summer of 1984 or 1985, at least one year after the 156-worker peak for the dewatering plant. This means that since construction of the dewatering plant would occur in a period of little other construction activity, most of its manpower requirements would be met by the local labor force. Assuming that two spreads move from north to

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TABLE 5B-3
CONSTRUCTION MANPOWER DEMAND, PRYOR DEWATERING PLANT AND MAINLINE PUMP STATION
(1.5. MMTA CAPACITY IN 1984, 3.0 MMTA CAPACITY IN 1986)

	YEAR/QUARTER																			
	1983				1984				1985				1986				1987			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Dewatering Plant					7	46	88	139	156	132	93	43	20	38	60	67	56	40	18	
Mainline Pump Station No. 8						20	49	49	39	39	38	30								
Subtotal ETSI Fixed-Site Components					7	66	137	188	195	171	131	73	20	38	60	67	56	40	18	
Pipeline Spread II							670					670								
Grand River Dam[1] Authority Unit 2								Construction startup some time in 1984				Peak demand about 850 some time in 1985			Online commercial date July 1986					

[1] Billingsley 1980.

south, pipeline spread III would construct the main slurry pipeline segments east of the Pryor site during the third quarter of 1983, and spread II would construct the pipeline segments west of the Pryor site during the fourth quarter of 1984. Each spread would have a work force of 670 pipeline construction workers (Figure 5-2).

Population and Employment: Changes Caused by ETSI. The construction work force for the Pryor dewatering plant would come from the Tulsa SMSA and the northeast region of Oklahoma. The Tulsa SMSA is projected to have 9400 persons employed as construction workers in 1981, and the northeast region is expected to have 2586 (Table 5B-2).

The ratio of local to nonlocal construction workers projected for GRDA Unit 1 was 80 percent local and 20 percent nonlocal (GRDA Unit 1 Environmental Information Document). Peak manpower demand was about 1000 for Unit 1. Since at most only 156 workers would be needed to construct the Pryor dewatering plant, there should be no problem filling close to 100 percent of these jobs from the local area and the Tulsa construction labor pool. Thus a local/nonlocal ratio of 100/0 is assumed.

Nearly all the dewatering plant construction jobs are expected to be filled by present residents of the local area (including Tulsa); therefore there is no expectation of any measurable in-migration of nonlocal construction workers, or of any population increase (Table 5B-4).

Pipeline construction workers from spread III are expected to be in the area for from two to four months during the third quarter of 1983. Spread II would be in the area in the fourth quarter of 1984.

TABLE 5B-4
ESTIMATED EMPLOYMENT AND POPULATION INCREASES DURING CONSTRUCTION
OF PRYOR DEWATERING PLANT

EMPLOYMENT	
Direct Employment	
Peak construction workforce	195
times assumed percentage nonlocal[1] (0)	
equals nonlocal direct construction employment (0)	
Secondary Employment	
Nonlocal direct construction employment (0)	
times secondary employment multiplier[2] (0.6)	
equals secondary employment (0)	0
Secondary Employment (0)	
times assumed percentage nonlocal[1] (0)	
Total Employment	195
POPULATION	
Nonlocal direct construction employment (0)	
times percentage single (40%)[2] =	0
equals nonlocal direct singles	
Nonlocal direct construction employment (0)	
times percentage with families (60%)[2] = (0)	
times average family size (3.7)[2]	
equals nonlocal direct with family members	0
Nonlocal secondary employment (0)	
times percent single (50%)[2]	0
equals nonlocal secondary singles	
Nonlocal secondary employment (0)	
times percent with families (50%) = (0)	
times average family size (3.7)[2]	
equals nonlocal secondary with family members	0
Total New Nonlocal Population	0

[1]Assumptions based on review of labor force availability and experience with other construction projects.
[2]Adopted from HUD 1976, p. 5.

Both spreads would be the same size. About 335 of the 670-worker spread would be nonlocal. Total transient, nonlocal population would be about 435 persons.

Housing. No significant increase in housing market demand is expected from the work force constructing the Pryor dewatering plant and pump station. The demand for temporary housing is estimated to be around 200 in the third quarter of 1983 and the fourth quarter of 1984, when spread III and spread II would be in the Pryor area (Table 6-3). While Pryor has only 150 hotel/motel rooms (Clack 1980), pipeliners would be able to find housing accommodations in Bartesville, Claremore, and Tulsa, as well.

Public Services. No significant increase in demand for local public facilities and services is expected as a result of construction of the Pryor dewatering plant, the pump station, or the pipeline.

Operation

Under the proposed action, the Pryor dewatering plant would also be the site of the slurry pipeline system maintenance base for the central district. The total operation and maintenance personnel at the Pryor dewatering plant would be about 111 persons. The new employees would live in Pryor, Choteau, Locust Grove, Salina, Claremore, Tulsa, or other nearby communities. Assuming that the jobs were all taken by nonlocals (a conservative "worst-case" assumption), the direct employment would lead to the creation of about 122 secondary jobs in these communities (Table 5B-5). A population increase of about 519 persons would occur in the local area, which includes the Tulsa SMSA. As the increase would be distributed throughout the area, it would be insignificant.

TABLE 5B-5
EMPLOYMENT AND POPULATION INCREASES DURING OPERATION,
PRYOR DEWATERING PLANT AND MAINTENANCE BASE

EMPLOYMENT	
Direct Operation and Maintenance Employment	111
• Assume 100 percent nonlocal as a worst case	
Secondary Employment Nonlocal direct employment (111) times secondary employment multiplier (1.1)[1] equals secondary employment	122
Nonlocal Secondary Employment Secondary employment (122) times assumed percentage nonlocal[2] (80%) equals nonlocal secondary employment (98)	98
Total Employment	331
POPULATION	
Nonlocal direct employment (111) times percent single[3] (40%) equals nonlocal direct singles	44
Nonlocal direct employment (111) times percent with families (60%) = (67) times average family size[3] (3.7) equals nonlocal direct with family members	246
Nonlocal secondary employment (98) times percent single (50%) equals nonlocal secondary singles	49
Nonlocal secondary employment (98) times percent with families (50%) times average family size (3.7) equals nonlocal secondary with family members	181
Total New Population	520

[1]Secondary employment multiplier adopted from HUD 1976, p. 5.
[2]Mix of locals and nonlocals taking secondary employment adopted from HUD 1976, p. 5.
[3]Percent single, percent with families, and family size factors adopted from HUD 1976, p. 5.

Housing. Since the new population would be distributed throughout the Tulsa SMSA, no significant effects on the housing market are expected. Permanent employees would find housing in Pryor, Locust Grove, Choteau, and further away in Claremore and Tulsa.

Public Services. No significant increased demand or stresses on local public facilities and services is expected as a result of the Pryor dewatering plant.

Property Tax Revenues. New property tax revenues would be generated to Mayes County by the dewatering plant and pump station. The pipeline-only counties (Osage, Washington, and Rogers) also would receive new tax revenues (Table 5B-6).

Abandonment

Upon abandonment of the project, the operation and maintenance positions at the site would be eliminated. However, there would be some short-term "construction" employment during demolition.

Property tax revenues, already reduced by the depreciation of the ETSI capital improvements, would decline further. Assessed value would equal salvage value of the remaining improvements, plus the value of the land.

CUMULATIVE EFFECTS

The construction and operation activities would not contribute significantly to any cumulative social or economic effects in the area.

TABLE 5B-6

ESTIMATES OF ETSI PROPERTY TAXES AND COMPARISON WITH 1976-77 COUNTY PROPERTY TAXES, PRYOR AREA, OKLAHOMA - PROPOSED ACTION

	Estimated ETSI Property Tax (1980 Dollars)[1]			County Local Property Tax 1976-77 ($1000s)[2]		Evaluation of ETSI (1980$) Revenues			
State and County	Assessed Valuation of ETSI Components x 1000	Tax Factor (percent)	Revenues (1980 Dollars) x 1000	Assessed Valuation Subject to tax x 1000	Property Tax Revenues	ETSI Assessed Valuation and 1976/77 Assessed Value 1 - 4	ETSI Assessed Valuation as a % of 1976/77 Assessed Value 1 - 4	Minimum Property Tax Revenues with ETSI 3 - 5	ETSI Revenues as a % of 1976/77 Property Tax Revenues 3 - 5
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Osage	42,500	1.53	650	61,971	3,208	104,471	69	3,858	20
Washington	11,100	1.79	200	89,650	5,945	100,750	12	6,145	3
Rogers	25,400	1.73	439	68,623	4,362	94,023	37	4,801	10
Mayes	29,000	1.69	490	29,405	2,126	58,405	37	4,801	10

[1] ETSI 1980.

[2] U.S. Bureau of the Census, 1977 Census of Governments.

SOCIOECONOMIC IMPACT SUMMARY: AREA 7 - PRYOR
(Proposed action, but see also Area 7MA - Oologah-Pryor
for market alternative)

Baseline Conditions

The Pryor site is located in Mayes County (30 miles from Tulsa), a part of the Tulsa SMSA. Tulsa provides a large labor pool. Local communities are in various states of growth and fiscal capability. Pryor Creek (Pryor) and Locust Grove are in good shape. Choteau (population 1200; 5 miles from the site) is experiencing a growth boom and is expanding all services.

Project Components and Activities

- Dewatering plant (3.0 MMTA) and pump station; peak construction work force will be 195 in first quarter of 1984.
- Main slurry pipeline; spread III construction work force will be 670 in third quarter of 1983.
- Dewatering plant and maintenance base operational work force of 111 persons.

Social and Economic Effects

(Changes in local conditions due to ETSI, and significance.)

Construction. Construction workers (peak 195) will be from the local area and Tulsa; no in-migration of nonlocal workers will occur. Thus there will be no population increases, and no increased demand for housing and public services--in short, no significant impact.

Operation. New direct employment of 111 operators and maintenance workers will stimulate the creation of an estimated 122 secondary service jobs, and a "worst-case" regional population increase of about 520. A demand for housing will result, but it will have no significant impact. Property tax revenues will accrue to the local taxing jurisdictions.

Abandonment. Abandonment of the project will mean the eventual loss of employment and of property tax revenue.

Cumulative Effects

There will be other industrial growth in the area, including the Grand River Dam Authority power plant at the site. Growth in population and employment opportunities may lead to increases in wages paid, stimulation of housing construction, and increases in rents.

SOCIOECONOMIC IMPACT SUMMARY TABLE, PRYOR, OKLAHOMA, AREA
(Alternatives: see Area TMA for analysis of market and pipeline-barge alternatives)

Social/Economic Indicator	Baseline Conditions	Construction Impacts	Operation Impacts
Employment	Construction (1981) / Total (1981) Tulsa SMSA 9,400 / 288,890 N.E. Region 2,590 / 91,509 TOTAL 11,990 / 380,399	Fixed-Site Peak: 137 (1.1 percent of total pool) nonlocal: 0 Pipeline: 670 nonlocal: 335 (3rd quarter 1983, and 4th quarter 1984)	Direct: 11 Secondary: 122
Population	1975 Pryor 7,797 Five-County Area 551,133	Fixed-Site: No population change Pipeline: Mobile population 435 (3rd quarter 1983, and 4th quarter 1984)	Permanent: 516 No significant effects
Housing	153 apartment units under construction in Pryor; 30 in Locust Grove Pryor has 150 motel rooms	Fixed-Site: No measurable demand Pipeline: short-term housing demand 200 units (3rd quarter 1983 and 4th quarter 1984)	No significant effects
Public Services	Generally adequate in Pryor and Locust Grove. Choteau is expanding all services.	No significant effects	No significant effects
Property tax base and revenues	See Table 5B-6	No significant effects	Significant positive tax revenue benefits to Osage, Washington, Rogers, and Mayes Counties

5.C OOLOGAH-PRYOR: AREA 7MA

Under the market alternative or the pipeline-barge alternative, a 3.5 MMTA dewatering plant would be built at Oologah, Oklahoma, and a 5.3 MMTA dewatering plant would be built about 30 miles east at Pryor, Oklahoma.

LOCAL STUDY AREA

The Oologah site is in Rogers County. The Pryor site is in Mayes County. The local study area includes Osage, Washington, Rogers, Mayes, Wagoner, Cherokee, and Adair counties; the main slurry pipeline would pass through all these counties. The study area also includes Tulsa County, a major potential source of construction labor (Figure 5-3 and Maps A-39, A-40, A-41).

BASELINE CONDITIONS

Population and Employment

Communities within easy commuting distance of the Oologah and Pryor dewatering plant sites are shown in Table 5C-1, along with their populations and approximate distance from the sites. Tulsa is about 30 miles from the Oologah site and 40 miles from the Pryor site. In 1975, total population in the eight-county area was 619,116.

Dewatering plant construction workers would be hired out of union halls in Tulsa, which would be the primary source of construction labor.

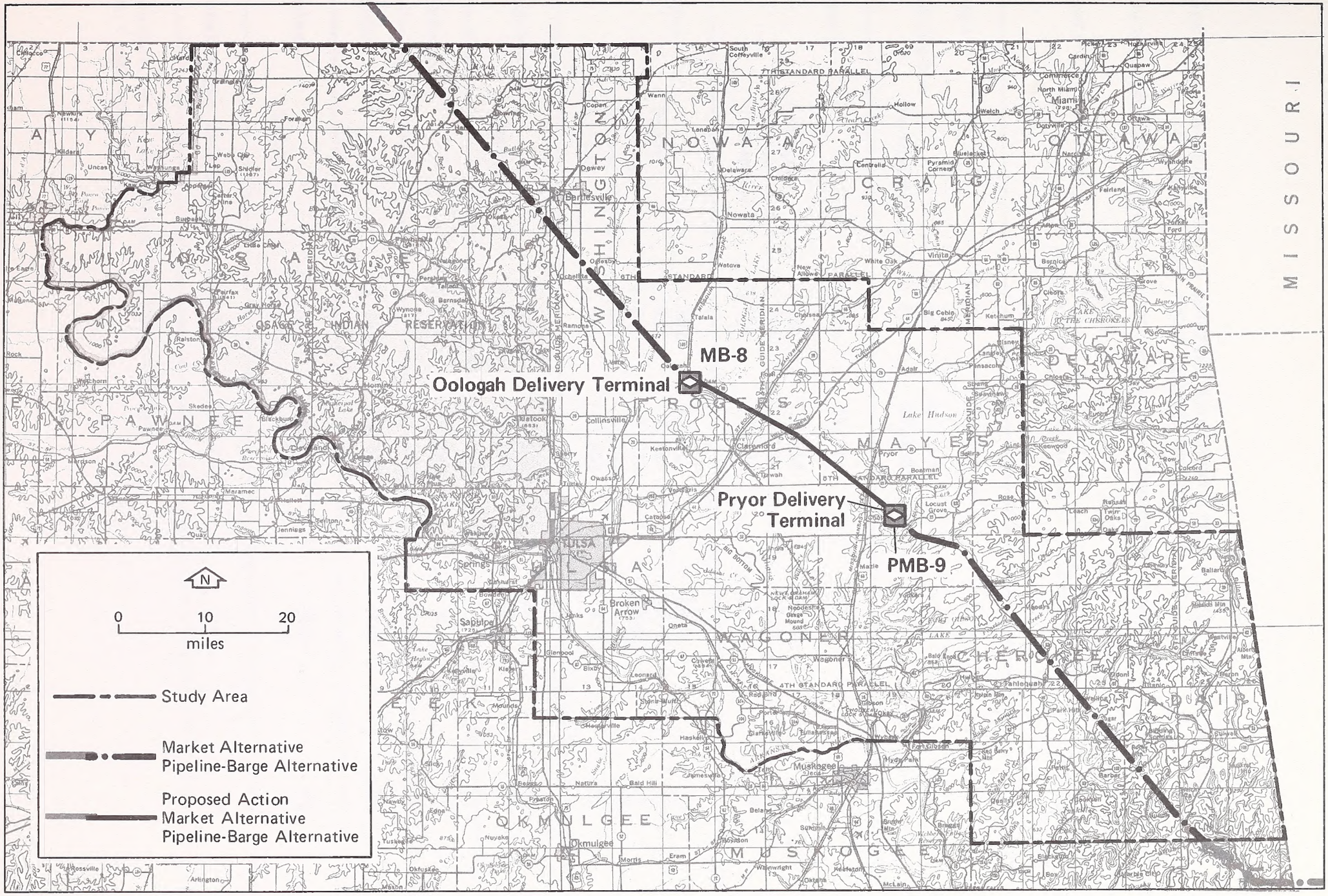

Figure 5-3. OOLOGAH-PRYOR LOCAL STUDY AREA

TABLE 5C-1. POPULATIONS OF COUNTIES AND COMMUNITIES WITHIN COMMUTING DISTANCE OF OOLOGAH AND PRYOR DEWATERING PLANTS

County	Community	Census 1970 Population	1975 Population	Population Change 1970-75 (%)	Approximate Distance from the Sites Oologah (miles)	Pryor (miles)
Osage		29,750	31,390	7.4	NA	NA
Washington		42,302	41,967	-3.0	NA	NA
	Bartlesville	29,683	29,388	-1.0	30	65
Rogers		28,425	33,671	17.5	NA	NA
	Oologah	458	568	24.0	5	35
	Talala	163	202	23.9	10	40
	Claremore	9,084	9,897	8.9	10	25
Mayes		23,302	27,213	18.6	NA	NA
	Pryor	7,057	7,797	10.5	35	15
	Choteau	1,046	1,192	14.0	45	5
	Locust Grove	1,090	1,142	4.8	60	10
	Salina	1,024	1,145	8.9	45	20
Wagoner		22,163	27,225	21.9	NA	NA
	Wagoner	4,959	6,288	26.8	50	20
Cherokee		23,174	25,143	9.6	NA	NA
Adair		15,141	16,615	7.9	NA	NA
Tulsa		399,982	416,892	4.3	NA	NA
	Tulsa	327,183	328,599	0.4	30	40
Total eight counties		584,239	619,116	6.0	NA	NA

Source: U.S. Bureau of the Census 1978.
NA = not applicable.

In 1976 8,341 persons were employed in construction in the Tulsa SMSA, and another 2,272 were employed in construction in the northeast Oklahoma labor region (Table 5C-2). In 1981, construction crafts-workers are expected to number about 9,400 in the Tulsa SMSA and be about 2,590 in the northeast labor region.

Housing

Housing was inventoried in Pryor, Choteau, and Locust Grove--three communities within 15 miles of the Pryor site. The availability of housing in communities near the Pryor dewatering site varies considerably from place to place. An influx of construction workers has come to the local communities during the construction of Grand River Dam Authority (GRDA) power plant Unit #1 at the Pryor site; however, officials in Pryor Creek (10 miles from the site), and Locust Grove (8 miles from the site), report that these communities have had few problems absorbing the construction workers who moved there. Pryor has an inventory of vacant houses and apartments and a vacancy rate of 10 percent. (See Section 5.B, "Housing," for more on housing in Pryor.)

PROJECT COMPONENTS

Project components under the market alternative or pipeline-barge alternative include:

- Main slurry pipeline
- Oologah dewatering plant (3.5 MMTA)
- Pump station No. 8 at Oologah site
- Pryor dewatering plant (5.3 MMTA)
- Pump station No. 9 at the Pryor site

TABLE 5C-2. CONSTRUCTION CRAFTS WORKERS EMPLOYMENT, TULSA SMSA AND NORTHWEST OKLAHOMA REGION, 1976-1981

	1976 Total Employment	1976 Employment Construction Crafts Workers	1976 Percent of Total Employment	1978 Job Openings Construction Crafts Workers	1981 Total Employment	1981 Construction Crafts Workers	1981 Percent of Total Employment	1976-1981 Change (Employment)	1976-1981 Change (Percent)
Tulsa SMSA[1]	245,524	8,341	3.39	487	288,890	9,399	3.25	1,058	12.68
Northwest Region[2]	80,377	2,272	2.82	139	91,509	2,586	2.82	314	13.82

Source: Oklahoma Employment Security Commission, October 1978 Occupational Employment and Job Openings 1976-1981 Tulsa SMSA. June 19, 1978. Occupational Employment Statistics program computer printout for northeast Oklahoma. Table II, "Employment by Occupation, Northeast Oklahoma, 1976-1981, and Table IV, "Job Openings by Occupation Northeast Oklahoma, 1978 Average Annual."

[1] Tulsa SMSA includes these counties: Orange, Tulsa Creek, Rogers, Mayes, and Wagoner.

[2] The northeast region includes these counties: Washington, Norton, Craig, Ottawa, Delaware, Cherokee, Adair, Okmulgee, Muskogee, Sequoyah, and Makintosh.

ETSI PROJECT IMPACT ON OOLOGAH-PRYOR AREA

Construction Schedule and Perscnnel

The Oologah dewatering plant would be built to 3.5 MMTA capacity in one phase, and would be available in 1985 (Table 5C-3). Construction would begin in the first quarter of 1983 and be completed in the fourth quarter of 1984. The mainline pump station at Oologah would be constructed in 1983 and 1984. Peak manpower demand at Oologah would be about 272 in the first quarter of 1984.

The Public Service Company of Oklahoma has been constructing Units #3 and #4 of its northeastern station at Oologah. Unit #3 went into operation in fall 1979. Unit #4 will go online in June 1980. The peak work force during construction was 1,200 (Public Service Company of Oklahoma 1980).

The Pryor dewatering plant would be built to 5.3 MMTA capacity in two phases, with the initial phase completed by the end of 1984. The peak manpower for the dewatering plant and pump station No. 8 would be about 210 workers in the first quarter of 1984.

Construction of the first phase of the Pryor dewatering plant would occur before the construction of Grand River Dam Authority's power plant Unit #2 was started at the Pryor site. Unit #1 is under construction and scheduled to go online in July 1981. The schedule for Unit #2 is not firm, but construction probably will begin in 1984, with commercial start up in July 1986.

The main slurry pipeline would be constructed in the Oologah-Pryor area by pipeline spreads II and III (Figure 5-3). In the third quarter of 1983, spread III would construct the pipeline segment southeast of the Pryor site towards Atkins Junction. In the third

TABLE 5C-3. CONSTRUCTION MANPOWER DEMAND, OOLOGAH AND PRYOR DEWATERING PLANT SITES (MARKET AND PIPELINE=BARGE ALTERNATIVE)

	Year/Quarter													
	1983				1984				1985				1986	
	1	2	3	4	1	2	3	4	1	2	3	4	1	2
Oologah Dewatering Plant (3.5 MMTA)	10	65	125	199	223	188	133	61						
Pump Station No. 8		20	49	49	39	39	38	30						
Sub total ETSI Fixed-Site Components at Oologah	10	85	174	248	262	227	171	91						
Pryor Dewatering Plant (5.3 MMTA)	8	51	97	154	172	145	102	47	22	50	72	77	66	44
Pump Station No. 9		20	49	49	39	39	38	30						
Sub Total ETSI Fixed-Site Components at Pryor	8	71	146	203	211	184	140	77	22	50	72	77	66	44
Subtotal ETSI Fixed-Site Components at Oologah and Pryor	18	156	320	451	473	411	311	168	22	50	72	77	66	44
Main Slurry Pipeline			670				670							
Grand River Dam Authority Unit #2 (at Pryor)					Construction startup sometime in 1984				Peak demand about 850 sometime in 1985				Online commercial date July 1986	

quarter of 1984, spread II would be constructing the pipeline northwest and southeast of the Oologah site, including the 30 miles to the Pryor site. Manpower on both of these spreads would be about 670.

Population and Employment: Changes Caused by ETSI. The combined direct construction employment at the Oologah and Pryor dewatering plants would peak at about 470 in the first quarter of 1984. With over 1,400 construction craftsworkers in the Tulsa SMSA (including Mayer and Rogers Counties), no significant in-migration of nonlocal workers is expected in order to fill these 470 jobs (Table 5-C4).

Since most of the fixed-site work force on these two sites would already reside in the local area (including Tulsa) no new secondary employment would be created. No in-migration of secondary construction workers is expected as a result of fixed-rate construction at the Oologah and Pryor sites.

Pipeline spreads II and III would have about 670 persons each. Half the spread workforce (335) is expected to come from the local area, and the other half is expected to come from out of the area. The influx of pipeline construction workers would cause a short-term local increase in population of about 435 persons (Table 6-3).

Housing. Construction of the dewatering plants at Oologah and Pryor would not cause any significant effect on local housing demands. Most of the construction workers would be hired out of union halls in Tulsa, and would commute the 30 to 40 miles or more to the job sites.

About 200 temporary housing units are estimated to be required for the nonlocal pipeline workers and their families for the two to four months each spread is in the area. Spread III would be there the

TABLE 5C-4. ESTIMATED EMPLOYMENT AND POPULATION INCREASES DURING CONSTRUCTION OF THE OOLOGAH AND PRYOR DEWATERING PLANTS

DIRECT EMPLOYMENT	
Peak construction work force	473
x assumed percentage nonlocal[1] (0)	
= nonlocal direct construction employment (0)	
SECONDARY EMPLOYMENT	
Nonlocal direct construction employment (0)	
x nonlocal secondary employment multiplier[2] (.6)	
= secondary employment (0)	0
x assumed percentage nonlocal[1] (0)	
Total Employment	473
POPULATION	
Nonlocal direct construction employment (0)	
x percentage single[2] (40%) = (0)	
= non-local direct singles (0)	
Nonlocal direct construction employment (0)	
x percentage with families[2] (60%) = (0)	
x average family size[2] (3.7)	
= non-local direct with family members	0
Nonlocal secondary employment (0)	
x percentage single[2] (50%) = (0)	
= non-local secondary singles[2] (3.7)	0
Nonlocal secondary employment (0)	
x percentage with families[2] (50%) = (0)	
x average family size[2] (3.7)	
= non-local secondary with family members	0
TOTAL New Non-Local Population	0

[1]Assumptions based on review of labor force availability and experience with other construction projects.

[2]Adapted from HUD 1976, p 5.

third quarter of 1983; spread II would be there the third quarter of 1984. Mobile workers would find some available motel and rental units in the immediate area, but some pipeliners probably would have to settle for motel or apartment accommodations in Tulsa, 40 or more miles away.

Public Services. Construction of the Oologah and Pryor dewatering plants would not cause any significant effect on local public facilities and services.

Operation

Personnel. The Oologah dewatering plant would require about 24 persons to operate and maintain the facility. The Pryor site would have the central district maintenance base as well as the dewatering plant. Direct employment of Pryor would be about 93, as opposed to 111 under the proposed action.

Population and Employment: Changes Caused by ETSI. Assuming that all 107 new direct operating and maintenance jobs were filled by nonlocals (a worst-case assumption), about 118 new service jobs would be generated in the area (Table 5C-5).

Regional population increase due to in-migration is estimated at around 510 persons.

Housing. The nonlocal direct operation and maintenance workers at the Oologah and Pryor dewatering plants should have no great problems finding housing in the area. Even assuming that all the new direct jobs are taken by nonlocals who would demand housing, the new demand would be relatively small and would not significantly affect the housing market in the area.

Table 5C-5. EMPLOYMENT AND POPULATION INCREASES DURING OPERATION OOLOGAH AND PRYOR DEWATERING PLANTS.

EMPLOYMENT	
Direct Operation and Maintenance Employment	107
Assume 100 percent nonlocal as a worst case	
Secondary Employment	
nonlocal direct employment (107)	
x secondary employment multiplier[1] (1.1)	
= secondary employment	118
Nonlocal Secondary Employment	
secondary employment (118)	
x assumed percentage nonlocal[2] (80%)	
= nonlocal secondary employment (94)	
Total Employment	225
POPULATION	
nonlocal direct employment (107)	
x percent single[3] (40%)	
= nonlocal direct singles	43
nonlocal direct employment (107)	
x percent with families (60%) = (64)	
x average family size[3] (3.7)	
= nonlocal direct with family members	238
nonlocal secondary employment (94)	
x percent single (50%)	
= secondary singles	47
nonlocal secondary employment (94)	
x percent with families (50%)	
x average family size (3.7)	
= nonlocal secondary with family members	174
TOTAL New Population	502

Notes: [1]Secondary employment multiplier adopted from HUD 1976, p. 5.

[2]Mix of locals and nonlocals taking secondary employment adopted from HUD 1976, p. 5.

[3]Percent single, percent with families and family size factors adopted from HUD 1976, p. 5.

Public Services. No significant effects on local public facilities and services would occur from new employment and population levels generated by the Oologah and Pryor dewatering facilities and maintenance base.

Public Finances. Annual property taxes would accrue to the counties occupied by the ETSI facilities (Table 5C-6).

Abandonment

Should the project be abandoned at the end of the 50-year project period, the 107 direct jobs at the two dewatering plants would be eliminated. Property tax revenues, already reduced by the depreciation of the facility, would decline. Assessed value would equal salvage value of facilities, plus the value of the land.

Cumulative Effects

In addition to the proposed ETSI dewatering plants at Oologah and Pryor, there are several other industrial projects proposed or under construction in the area, including Grand River Dam Authority's Unit #2 and various factories at the 10,000-acre Mid-America Industrial District. As Table 5C-3 shows, construction for GRDA Unit #2 would start sometime in 1984, while the Pryor dewatering plant is under construction. Since construction at the dewatering plant would continue at a manpower level of 50 to 80 through the GRDA Unit #2 construction period, the ETSI employment would contribute to the on-site aggregate manpower loading.

Because of areawide economic and population growth, local communities are expanding housing and public services capacities. The construction and operation of the ETSI system would contribute in small part to the regional growth in employment, income, population, and demand for housing and public services.

TABLE 5C-6

ESTIMATES OF ETSI PROPERTY TAXES AND COMPARISON WITH EXISTING COUNTY PROPERTY TAXES 1976/77
OOLOGAH-PRYOR STUDY AREA ALTERNATIVES: Market & Barge

	County	Estimated ETSI Property[a] Tax (1980 dollars)			County Local Property[b] Tax 1976-77		Evaluation of ETSI[c] (1980 $) Revenues			
		Assessed Valuation of ETSI Components (x $1000)	Tax Factor (percent)	Revenues (x $1000)	Assessed Valuation Subject to Tax (x $1000)	Property Tax Revenues (x $1000)	ETSI Assessed Valuation and Existing Assessed Valuation (x $1000)	ETSI Assessed Valuation as a % of Existing Assessed Value (x $1000)	Sum ETSI Revenues and 1976/77 Revenues (x $1000)	ETSI Revenues as a Percent of 1976/77 Revenues
							[1 + 4]	[1 ÷ 4]	[3 + 5]	[3 ÷ 5]
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Pipeline & Pump Station										
	Osage	28,900	1.53	440	61,971	3208	90,871	47	3648	14
	Washington	16,700	1.79	300	89,650	5945	106,350	19	6245	5
	Rogers	39,100	1.73	676	68,623	4362	107,723	57	5038	15
	Mayes	36,200	1.69	612	29,405	2126	65,605	123	2738	29
	Cherokee	23,800	1.61	380	19,611	1366	43,411	121	1746	28
	Adair	12,600	1.69	210	9,800	913	22,500	127	1123	23
Dewatering Plant										
	Rogers	20,500	1.73	355	68,623	4362	89,123	30	4717	8
	Mayes	27,900	1.69	472	29,405	2126	57,305	95	2598	22
TOTAL										
	Osage	28,900		440	61,971	3208	90,871	47	3648	14
	Washington	16,700		300	89,650	5945	106,350	19	6245	5
	Rogers	59,600		1031	68,623	4362	128,223	87	5393	24
	Mayes	64,100		1084	29,405	2126	93,505	22	3210	51
	Cherokee	23,800		380	19,611	1366	33,411	121	1746	28
	Adair	12,600		210	9,900	913	22,500	127	1123	23

[a]ETSI 1980. Estimated property taxes by county were established by ETSI for the EIS by extrapolating previously developed unit cost estimates for components and should in no way be construed as representing the cost estimate for the components. Values shown on this table were derived by ETSI as follows:

Sum of estimated cost of components in county x statewide ratio of assessed value to market value = assessed valuation of ETSI Components x property tax rate (percent) assumed for county = estimated ETSI property taxes (in 1980 dollars)

[b]U.S. Bureau of the Census, 1977 Census of Governments.

[c]Column 6 is the sum of estimated ETSI Assessed Valuation (AV) as of 1980 and the 1976/77 total county assessed valuation, i.e. (Column 6 = Column 1 + Column 4).

Column 7 is the ratio of the ETSI AV to the 1976/77 total county AV expressed as a percent, i.e. (Column 7 = Column 1 divided by Column 4).

Column 8 is the sum of the estimated ETSI property tax revenues and the 1976/77 total county property tax revenues, i.e. (Column 8 = Column 3 + Column 5).

Column 9 is the ratio of the estimated ETSI revenues to the 1976/77 total county property tax revenues expressed as a percent, i.e. (Column 9 = Column 3 divided by Column 5).

SOCIOECONOMIC IMPACT SUMMARY AREA 7: Oologah-Pryor
(Alternative: market and pipeline=barge alternative; see Area 7-Pryor for proposed action)

Baseline Conditions

The Oologah and Pryor sites are in Rogers and Mayes Counties respectively. Both counties are in the Tulsa SMSA, and the sites are 30 to 40 miles from Tulsa proper. The labor pool in the area includes about 12,000 construction workers.

Project Components and Activities

- Dewatering plant and pump station at Oologah site.
- Dewatering plant and pump station at Pryor site; combined peak construction workforce 483 first quarter of 1984.
- Main slurry pipeline; spread III 670 workforce, third quarter of 1983; spread II 670 workforce, fourth quarter of 1984.

Social and Economic Effects

(Changes in local conditions due to ETSI, and significance.)

Construction. Construction workers (peak 483) will come from local area and Tulsa. No significant in-migration will occur; thus there will be no measurable effects on housing demand or public services. Pipeline construction effects will be minor.

Operation. Operation of the project will create new direct and secondary employment of 107 and 118, respectively. Population will increase region-wide by 508. Not significant.

Abandonment. Abandonment of the project will result in the eventual loss of employment and of property tax revenues.

Cumulative Effects

The construction of the dewatering plant will overlap with that of the power plant at the Pryor site, but manpower peaks will not coincide. The ETSI project will share in the industrial-development-related growth in the area.

SOCIOECONOMIC IMPACT SUMMARY TABLE, OOLOGAH-PRYOR, OKLAHOMA (AREA 7MA) (Alternatives: market and pipeline/barge)

Social/Economic Indicator	Baseline Conditions	Construction Impacts	Operation Impacts
Employment	Construction (1981) / Total (1981) Tulsa SMSA 9,400 / 288,890 Northeast Region 2,590 / 91,509 TOTAL 11,990 / 380,399	Fixed-Site Peak: 483 (4% of 1981 construction labor pool) nonlocal 0 Pipeline: 670 Nonlocal: 335	Direct: 107 Secondary: 118
Population	(1975) 5-county area 551,133 8-county area 619,116	Fixed-Site: No population change Pipeline: mobile population 435 (3rd qtr. 1983, 4th qtr. 1984)	Permanent: 508 No significant change
Housing	Housing not inventoried in region, but 153 Apt. units under construction in Pryor; 30 in Locust Grove. Pryor has 150 motel rooms. Bartlesville has 400 hotel/motel rooms.	Fixed-Site: No significant effect Pipeline: short-term housing demand of 200 units. (3rd qtr 1983, 4th qtr 1984)	No significant change
Public Services	Generally adequate in Pyror and Locust Grove. Choteau is expanding all services.	No significant effect	No significant effect
Property Tax Base and Revenues	See Table 5C-6.	No significant effect	Significant positive tax revenue benefits to Osage, Washington, Rogers, Mayes, Cherokee, and Adair counties.

5.D MUSKOGEE: AREA 7PA

The dewatering plant at Muskogee and the main slurry pipeline to the site are part of the proposed action only.

LOCAL STUDY AREA

The Muskogee dewatering plant would be located in the Muskogee Industrial Park in Muskogee County. The local study area includes five counties: Muskogee, Wagoner, McIntosh, Cherokee, and Okmulgee (Figure 5-4, Maps A-17 and A-18).

BASELINE CONDITIONS

Population and Employment

Muskogee is a service and employment center for the surrounding area. It has been designated as a growth center by the state Department of Transportation and the federal Economic Development Administration. The local study area corresponds roughly to the Muskogee trade area, which includes all or portions of ten counties: Sequoyah, Adair, Cherokee, Wagoner, Mayes, Okmulgee, McIntosh, Tulsa, Pittsburg, and Muskogee. The trade area's population in 1975 was estimated at 168,140 (Muskogee Metropolitan Area Planning Department, Economic Trends, p. 5). The five-county study area's population in the same year was 164,288 (Table 5D-1).

Table 5D-1 lists the populations of the five counties in the local study area and in the communities within commuting distance of three dewatering sites. Tulsa, a major city (328,600 persons in 1975), is about 50 miles away via the Muskogee turnpike. It would be a major source of construction labor for the dewatering plant.

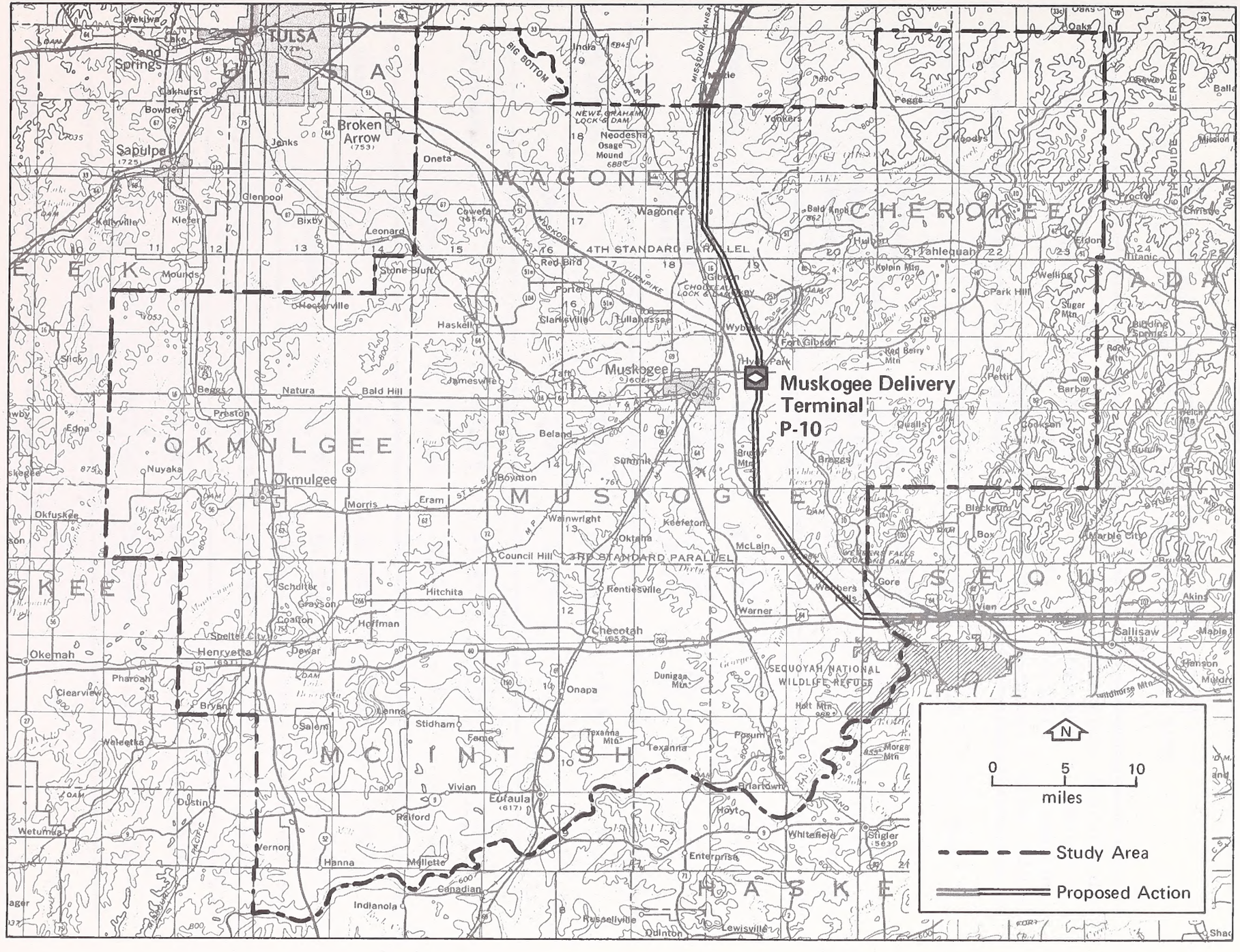

Figure 5-4. MUSKOGEE LOCAL STUDY AREA

TABLE 5D-1

POPULATIONS OF COUNTIES AND COMMUNITIES WITHIN COMMUTING DISTANCE OF THE MUSKOGEE DEWATERING PLANT SITE

County	Community	Census 1970 Population	1975 Population	Population Change 1970-1975 (percent)	Approximate Distance from the Site (miles)
Muskogee		59,542	61,894	3.5	N.A.
	Muskogee	37,311	37,313	0.0	5
	Fort Gibson	1,418	1,684	18.8	10
	Haskell	2,063	2,120	2.8	20
	Warner	1,217	1,441	18.4	20
Wagoner		22,163	27,225	21.9	N.A.
	Wagoner	4,959	6,288	26.8	15
	Coweta	2,457	2,876	17.1	25
McIntosh		12,472	13,603	6.8	N.A.
	Checotah	3,074	3,236	5.3	25
Cherokee		23,174	25,143	9.6	N.A.
	Tahiequah	9,254	8,573	- 7.4	30
Okmulgee		35,358	36,423	3.7	N.A.
	Okmulgee	15,180	14,953	- 1.5	45
5-County Area		152,709	164,288	7.6	N.A.
Tulsa		399,982	416,892	4.3	N.A.
	Tulsa	327,183	328,599	0.4	50

Source: U.S. Bureau of the Census 1978.

Recently, the population of Muskogee has been growing. The in-migration of retirees seeking recreation opportunities, and of persons still in the labor force who seek the job opportunities provided by many new industries that are moving to the community, accounts for this increase. In 1979 the population of the city of Muskogee was estimated at 41,300. The county population was 65,200; the population within a 30-mile radius was 133,000.

In December 1979 the total civilian labor force in Muskogee County was 27,325. Of these people, around 25,950 were employed; the unemployment rate was 5.0 percent. The construction work force for the Muskogee dewatering plant is expected to come from the northeastern region of Oklahoma (as defined by the Oklahoma Employment Security Commission) and from the Tulsa SMSA. Total employed construction labor in these two regions is projected to be 11,985 in 1981 (Table 5D-2).

Housing

It is expected that the construction workers on the Muskogee dewatering plant would live in and commute from some of the other communities in the Muskogee trade area and from Tulsa. However, since only Muskogee would feel the principal effects of construction work-force buildup, data on housing and on community facilities and services are presented for Muskogee only.

To determine the status of housing in Muskogee and the Muskogee metro-area, a survey of housing and structural conditions was conducted in January and February of 1976 by the city of Muskogee and the Eastern Oklahoma Development District.

TABLE 5D-2

CONSTRUCTION CRAFTS WORKERS EMPLOYMENT TULSA SMSA AND NORTHEAST OKLAHOMA REGION, 1976-1981

	1976 Total Employment	1976 Employment Construction Crafts Workers	1976 Percent of Total Employment	1978 Job Openings Construction Crafts Workers	1981 Total Employment	1981 Construction Crafts Workers	1981 Percent of Total Employment	1976-1981 Change	1976-1981 Change (percent)
Tulsa SMSA[1]	245,524	8,341	3.39	487	288,890	9,399	3.25	1,058	12.68
Northeast Region[2]	80,377	2,272	2.82	139	91,509	2,586	2.82	314	13.82

Sources: Oklahoma Employment Security Commission, October 1978 Occupational Employment and Job Openings 1976-1981 Tulsa SMSA. June 19, 1978. Occupational Employment Statistics program computer printout for Northeast Oklahoma. Table II, "Employment by Occupation, Northeast Oklahoma 1976-1981 and Table IV, "Job Openings by Occupation, Northeast Oklahoma, 1978 Average Annual."

[1] Tulsa SMSA includes these counties: Orange, Tulsa Creek, Rogers, Mayes and Wagoner.

[2] The Northeast Region includes these counties: Washington, Norton, Craig, Ottawa, Delaware, Cherokee, Adair, Okmulgee, Muskogee, Sequoyah, and Makintosh.

In 1976, 13,175 single-family units were located within the Muskogee metro-area planning jurisdiction. Of these, some 333 were located outside the city limits in the Muskogee fringe area. According to the 1976 survey, there were 688 mobile homes (Table 5D-3).

Muskogee has 17 motels with 745 rooms (Oklahoma Gas and Electric Co. 1979).

Public Services

Muskogee's police department has 112 police officers; its fire department has 98 full-time personnel. The fire insurance classification is 4 in the city of Muskogee, and 8 outside the city in adjacent areas.

Peak demand for water in the Muskogee water system has been 16.5 million gallons per day (mgd) out of a total capacity of 22 mgd. Soon, however, the demand is expected to exceed this amount. The electorate was to vote in May 1980 on a $6 million bond issue to finance the needed expansion.

Sewage is treated by a catalytic process, using clarifiers and primary and secondary digesters. The 18 mgd capacity can serve a population of 60,000. The present load has been 7 mgd for a population of 41,300.

Muskogee has 16 schools with more than 7430 students, as well as the Indian Capital Area Vocational-Technical School and Bacone College.

PROJECT COMPONENTS

The ETSI project components in the Muskogee study area are limited to the 5.0 MMTA dewatering plant, pump station, and the main coal slurry pipeline (40-inch O.D.) north and south of the Muskogee site.

Table 5D-3

HOUSING INVENTORY: CITY OF MUSKOGEE AND METRO-AREA

	Number of Units
Single-family	13,174
Duplex	788
Multi-family	1,898
Mobile homes	688
	16,548

Source: Muskogee Metropolitan Area Planning Department, June 1977, The Comprehensive Plan for the Muskogee Metropolitan Area. p. 49, Table V-1.

ETSI PROJECT IMPACT ON THE MUSKOGEE STUDY AREA

The dewatering plant at Muskogee would be built as part of the proposed action only.

Construction

Schedule and Personnel. The Muskogee dewatering plant is scheduled to process 5.0 MMTA of coal for delivery, beginning in 1985. Construction would begin in the first quarter of 1983 and would continue through 1984 (Table 5D-4). Combined peak manpower demand at the dewatering plant and pump station would be about 260 workers in the first quarter of 1984.

Oklahoma Gas and Electric Company (OG&E) recently has finished constructing Muskogee Units #4 and #5, which presently are in service at the site. During construction of the two units, the peak manpower loading was 1100 workers. Because Unit #6 originally was scheduled to go on line in 1983, construction was started in 1979; however, as of 1980, OG&E has extended the date for commercial operation one year--to about June 1984--and has cut back the construction work effort. In order to meet the June 1984 commercial date, Unit #6 construction is expected to go on through 1982, 1983, and 1984. Manpower on Unit #6 would build up to about 450 in the summer of 1982 and 600 in the summer of 1983. This construction would be concurrent with the construction of the dewatering plant.

The combined or aggregate peak manpower loadings of the ETSI and OG&E construction at the site could reach 770 in the summer of 1983, which would be about 340 less than the 1100-worker peak previously experienced for Muskogee Units #4 and #5. Pipeline spread III construction crew would construct the main slurry pipeline in the area during the third or fourth quarter of 1983. One half (335) of the total work force of 670 is expected to be from the local area.

TABLE 5D-4

CONSTRUCTION MANPOWER DEMAND: MUSKOGEE AREA

	Year/Quarter											
	1982				1983				1984			
	1	2	3	4	1	2	3	4	1	2	3	4
Dewatering Plant (5.0 MMTA)					10	65	125	199	223	188	133	61
Mainline Pump Station No. 10						20	49	49	39	39	38	30
Subtotal ETSI Fixed-Site Components					10	85	174	248	262	227	171	91
Main Slurry Pipeline								610				
OG&E Muskogee Unit #6[1] (Original commercial date: June 1983) (Probable commercial date: June 1984)			450 indefinite				Peak 600 indefinite					

[1]Charles Tyree, Chief of Environmental Affairs, OG&E, 1980.

Employment and Population: Changes Caused by ETSI. A maximum of 262 workers would be required to construct the dewatering plant and pump station at the Muskogee site. Most of these jobs would be filled from the local area and the Tulsa construction labor pool. The construction work force for the Muskogee dewatering plant would come from the Tulsa SMSA and from the northeast region of Oklahoma (as defined by the Oklahoma Occupational Information System). In 1981 the Tulsa SMSA is projected to have 9400 persons employed as construction crafts workers, and the northeast region to have 2586.

Since most of the construction workers would come from the local area and from the Tulsa SMSA (50 miles away), the construction of the Muskogee dewatering plant and pump station is not expected to cause any significant in-migration of nonlocal workers or population increases (Table 5D-5).

The main slurry pipeline construction would cause about 335 mobile pipeline construction workers to in-migrate temporarily to the Muskogee area in the third or fourth quarter of 1983. Total transient population (workers with families) likely to be associated with the proposed project would number about 436, or .03 percent of the area's population.

Housing. No significant effect on the local housing market would be expected from construction of the dewatering plant and pump station. Mobile pipeline construction workers would demand an estimated 180 hotel/motel rooms or short-term apartment units during the third or fourth quarter of 1983 (Table 6-3). These workers should have no problem finding a sufficient number of short-term accommodations in Muskogee and the other communities in the area.

Public Services. No significant stress on local public facilities and services would be expected from construction of the dewatering plant, pump station, and pipeline.

TABLE 5D-5

ESTIMATED EMPLOYMENT AND POPULATION INCREASES DURING CONSTRUCTION OF MUSKOGEE DEWATERING PLANT

EMPLOYMENT	
Direct Employment	
Peak Construction Work Force x assumed percentage nonlocal[1] (0) = nonlocal direct construction employment (0)	262
Secondary Employment	
Nonlocal direct construction employment (0) x secondary employment multiplier[2] (.6) = secondary employment (0)	0
Secondary employment (0) x Assumed percent nonlocal[1] (0)	
Total Employment	0
POPULATION	
Nonlocal direct construction employment (0) x percent single (40%)[2] = nonlocal direct singles	0
Nonlocal direct construction employment (0) x percent with families (60%)[2] = (0) x average family size (3.7)[2] = nonlocal direct with family members	0
Nonlocal secondary employment (0) x percent single (50%)[2] = nonlocal secondary singles	0
Nonlocal secondary employment (0) x percent with families (50%)[2] = (0) x average family size (3.7)[2] = nonlocal secondary with family members	0
Total New Nonlocal Population	0

[1] Assumptions based on review of labor force availability and experience with other construction projects.

[2] Adapted from HUD 1976, p. 5.

Operation

Employment and Population: Changes Caused by ETSI. The Muskogee dewatering plant would employ 35 permanent operation and maintenance personnel. Assuming that all new direct jobs were taken by nonlocals (a worst-case assumption) and assuming an indirect employment multiplier of 1.1, this direct employment would create about 39 new secondary jobs (Table 5D-6). Population increase of an estimated 165 persons due to the operation of the Muskogee dewatering plant would be insignificant.

Housing. No significant effects on the local housing market would be expected.

Public Services. No significant increased demand or stresses on local public facilities and services would be expected as a result of operation of the Muskogee dewatering plant.

Public Finances. New annual property tax revenues, estimated at $1,087,000, would be generated to Muskogee County (Table 5D-7).

Abandonment

Should the project be abandoned at the end of the 50-year project period, the 35 permanent operation and maintenance positions at the Muskogee site would be eliminated. Property tax revenues, already reduced by the depreciation of the facility, would decline further. Assessed value would be based on the salvage value of the remaining improvements plus the value of the raw land.

TABLE 5D-6

ESTIMATED EMPLOYMENT AND POPULATION INCREASES DURING OPERATION OF THE MUSKOGEE DEWATERING PLANT

EMPLOYMENT	
Direct Operation and Maintenance Employment	35
Assume 100 percent nonlocal as a worst case	
Secondary Employment	
Nonlocal direct employment (35) x secondary employment multiplier[1] (1.1) = secondary employment	39
Nonlocal Secondary Employment	
Secondary employment (39) x assumed percentage nonlocal[2] (80%) = nonlocal secondary employment (31)	
Total Employment	74
POPULATION	
Nonlocal direct employment (35) x percent single[3] (40%) = nonlocal direct singles	14
Nonlocal direct employment (35) x percent with families (60%) = (21) x average family size[3] (3.7) = nonlocal secondary singles	78
Nonlocal secondary employment (31) x percent single (50%) = nonlocal secondary singles	16
Nonlocal secondary employment (31) x percent with families (50%) x average family size (3.7) = nonlocal secondary with family members	57
Total New Population	165

[1]Secondary employment multiplier adopted from HUD 1976, p. 5.

[2]Mix of locals and nonlocals taking secondary employment adopted from HUD 1976, p. 5.

[3]Percent single, percent with families and family size factors adopted from HUD, 1976, p. 5.

TABLE 5D-7

ESTIMATES OF ETSI PROPERTY TAXES AND COMPARISON WITH COUNTY PROPERTY TAXES 1976/77
MUSKOGEE STUDY AREA (Proposed Action Alternative)

	Estimated ETSI Property[1] Tax (1980 Dollars)			County Local Property[2] Tax 1976/77		Evaluation of ETSI[3] Revenues (1980 dollars)			
	Assessed Valuation of ETSI Components (x $1000)	Tax Factor (percent)	Revenues (x $1000)	Assessed Valuation Subject to Tax (x $1000)	Property Tax Revenues (x $1000)	ETSI Assessed Valuation plus 1976/77 Assessed Valuation (x $1000)	ETSI Assessed Valuation As a % of 1976/77 Assessed Valuation	Sum ETSI Revenues and 1976/77 Revenues (x $1000)	ETSI Revenues as a % of 1976/77 Revenues
Pipeline (& Pump Stations)	(1)	(2)	(3)	(4)	(5)	[1+4] (6)	[1÷ 4] (7)	[3+5] (8)	[3÷5] (9)
Wagoner	17,100	1.70	290	29,648	1,427	46,748	58	1,717	20
Muskogee	36,700	1.72	631	87,577	11,696	124,277	42	12,327	5
Dewatering Plant									
Muskogee	26,500	1.72	456	87,577	11,696	114,077	30	12,152	4
Total									
Wagoner	17,100	1.70	290	29,648	1,427	46,748	58	1,717	20
Muskogee	63,200	1.72	1,087	87,577	11,696	150,777	72	12,783	9

[1]ETSI 1980

Assessed Value and property taxes by county were estimated by ETSI by extrapolating previously developed unit cost estimates for components and should in no way be construed as representing the cost estimate for the components. Values shown on this table were derived by ETSI as follows:

Sum of estimated cost of components in county x Statewide ratio of assessed value to market value = Assessed valuation of ETSI Components x Property tax rate (percent) assumed for county = Estimated ETSI property taxes (in 1980 $)

[2]US Bureau of the Census, Census of Governments.

[3]Column 6 is the sum of estimated ETSI Assessed Valuation (AV) as of 1980 and the 1976/77 total county assessed valuation (i.e., column 6 = column 1 + column 4).

Column 7 is the ratio of the ETSI AV to the 1976/77 total county AV expressed as a percent (i.e., column 7 = column 1 divided by column 4).

Column 8 is the sum of the estimated ETSI property tax revenues and the 1976/77 total county property tax revenues (i.e., column 8 = column 3 plus column 5).

Column 9 is the ratio of the estimated ETSI revenues to the 1976/77 total county property tax revenues expressed as a percent (i.e., column 9 = column 3 divided by column 5).

CUMULATIVE EFFECTS

By itself, the construction of the ETSI project (Muskogee dewatering plant, pump station, and pipeline) is not expected to cause any serious socioeconomic changes locally. However, since OG&E would be constructing Muskogee Unit #6 at approximately the same time as the dewatering plant, and since Muskogee presently is experiencing strong industrial and economic growth, the construction of the pump station and pipeline would contribute to the area-wide economic development activity and would share some responsibility for changing socioeconomic conditions (e.g., demands for housing and local facilities and services).

SOCIOECONOMIC IMPACT SUMMARY AREA 7PA: MUSKOGEE

Muskogee dewatering plant and pipeline alignment - part of proposed action only.

BASELINE CONDITIONS

Muskogee is a service and employment center with a 1975 city population of 37,313. Tulsa is 50 miles away and would be a source of construction labor, the 1975 population was 328,599. Construction employment in Tulsa SMSA and northeastern labor region is projected to be 11,985 in 1981.

PROJECT COMPONENTS AND ACTIVITIES

- Main slurry pipeline: construction work force 610 in fourth quarter 1983
- Dewatering plant (5.0 MMTA) and pump station: peak construction work force 260 in first quarter 1984; operation work force of 35 to begin in 1985.

SOCIAL AND ECONOMIC EFFECTS

(Changes in local conditions due to ETSI, and significance)

Construction

Construction workers are expected to come from local area or Tulsa SMSA: thus no in-migration of nonlocal workers should occur. This means no population changes, no increased housing demand, and no significant impact.

Operation

Operation work force of 35. No significant impact. Some secondary employment. Property tax revenues would accrue to Muskogee County.

Abandonment

Loss of employment: no significant impact. Loss of property tax revenues: no significant impact.

CUMULATIVE EFFECTS

Oklahoma Gas and Electric Co. is planning to construct Unit #6 of Muskogee Power Plant at approximately the same time as the dewatering plant. Possible cumulative effects on population growth in the area.

Impact Summary Affected Area: Muskogee Alternative: Proposed Action Only

Social/Economic	Baseline Conditions		Construction Impacts			Operation Impacts	
Employment	Construction	11,985 (proj. for 1981) in NE OK.	Fixed-site			Direct:	35 jobs
			Local	262	2% of	Secondary:	39 jobs
			Nonlocal	0	NE OK. construction force		
	Total	380,399	Mobile				
			Local	335	3% of		
			Nonlocal	335	area construction force		
Population	Muskogee	61,894	Fixed-site			164 persons	.1% of local study area
	Wagoner	27,225	Nonlocal	0			
	McIntosh	13,603	Mobile				
	Cherokee	25,143	Nonlocal	436	.03% of population		
	Okmulgee	36,423					
	5-county area	164,288					
	Tulsa	416,892 (50 miles)					
Housing	16,548 housing units in Muskogee		Nonlocal			No significant impact	
			Fixed-site	0			
	745 rooms available in Muskogee		Mobile	180	hotel/ motel rooms in 3rd or 4th quarter 1983 (25% of motel rooms available in Muskogee)		
Public Services	Not Significant		Not Significant			Not Significant	

Property Tax Base and Revenues	1976/1977 Assessed Valuation (x $1000)	Property Tax Revenue	Estimated ETSI Minimum Tax Revenues (x $1000) 1980	Estimated ETSI Revenues as Percent of 1976/77 Revenues
Wagoner	$29,648	1,427	240	20
Muskogee	87,577	11,696	1,087	9

5.E INDEPENDENCE: AREA 10

The construction and operation of the Independence dewatering plant would be the same under the market alternative or pipeline-barge alternative as under the proposed action.

LOCAL STUDY AREA

The Independence dewatering plant site is located near the town of Newark, Arkansas (in Independence County), a drive of approximately one and a half hours northeast of Little Rock. The local study area may be defined as Independence and Jackson counties (Figure 5-5 and Map A-22), which is the previously defined local impact area for the Independence Steam Electric Station (Kaminarides 1977).

BASELINE CONDITIONS

Population and Employment

The communities in the local impact area are Newark, Oil Trough, Batesville, and Newport, Arkansas. Newark and Batesville are in Independence County; Newport is in Jackson County. Communities near the dewatering plant site, their populations, and the distances to the site are listed in Table 5E-1. The population of Independence County is estimated at 25,000 as of 1980 (Batesville Area Chamber of Commerce 1980). Table 5E-2 shows earnings and employment of Independence and Jackson counties. As of 1974 565 persons were employed in contract construction in Independence and Jackson counties.

The labor force in Independence County was estimated at 14,300 in 1980. The 1979 unemployment rate was 4.7 percent in Independence County, compared to 5.5 for the state and 5.6 for the nation (Batesville Area Chamber of Commerce 1980).

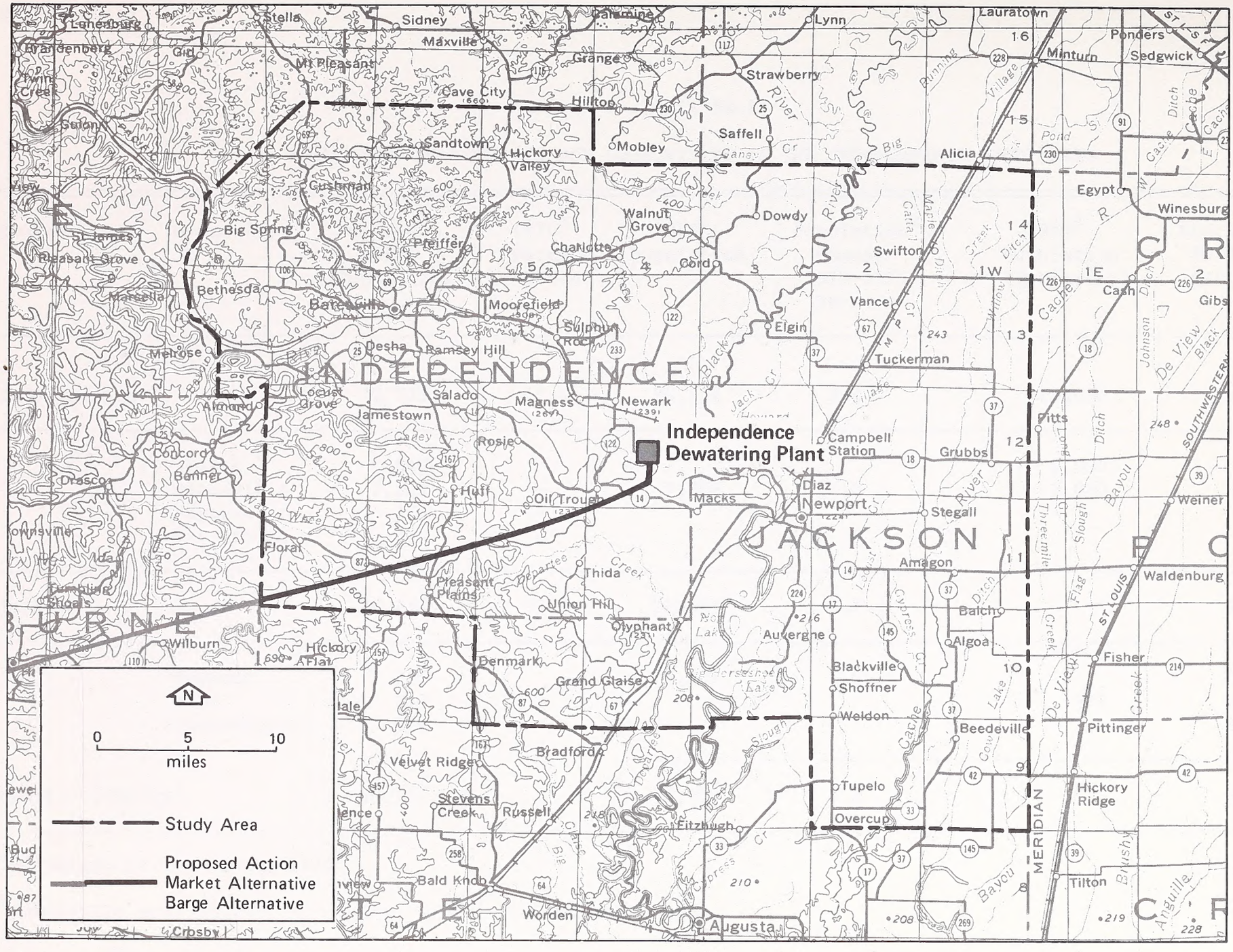

Figure 5-5. INDEPENDENCE LOCAL STUDY AREA

TABLE 5E-1

POPULATION OF COUNTIES AND COMMUNITIES IN THE INDEPENDENCE STUDY AREA

County	Community	Census[1] 1970 Population	1970[1] Percent Urban	1975[1] Population	Population[1] Change 1970-1975 Percent	1980[2] Population (Estimates)	Distance[3] To Site (Miles)
Independence		22,723	31.4	24,232	3.8	25,000	NA
	Newark	849	-			1,000	5
	Batesville	7,209	-	7,008	-2.8	9,000	25
	Magness	139	-				7
	Oil Trough	524	-				4
Jackson		20,452	37.5	21,193	6.1		NA
	Newport	7,725		7,831	1.4		20
	Diaz	283				674	23
	Jacksonport	306					23
TOTAL 2 COUNTIES		43,175		45,425	5.2		NA

[1]US Bureau of the Census 1978.

[2]Batesville Area Chamber of Commerce 1980; and McCartney 1980.

[3]ETSI. 1980 1:250,000 Scale USGS Sheets showing project components and alignments.

NA = Not Applicable.

TABLE 5E-2

COUNTY INDUSTRY EARNINGS AND EMPLOYMENT (1974)

Industry	Independence County Earnings: ($1000)	Independence County Employment	Jackson County Earnings: $(1000)	Jackson County Employment	2-Counties Employment
Agriculture	18,343	1,814	30,460	2,408	4,222
Mining	581	102	0	0	102
Contract Construction	1,975	190	4,782	375	565
Manufacturing	23,354	3,066	10,251	1,186	4,252
Transportation and Communication	4,600	236	3,146	138	374
Public Utilities	931	78	637	46	124
Wholesale and Retail Trade	10,566	1,518	11,044	1,282	2,800
Finance, Insurance, and Real Estate	1,620	169	2,317	191	360
Services	9,647	1,206	7,472	772	1,978
Government					
Federal,	1,692	152	767	66	218
State, and Local	4,678	882	5,347	825	1,925
COUNTY TOTAL	77,987	9,413	81,443	7,669	17,082

Source: U.S. Bureau of Economic Analysis 1974.

In 1976 Eastman Kodak Company began operations at a new plant in the area. Presently it employs about 700 permanent personnel. As new additions to the plant are completed, additional employees are expected to be hired. Construction peak manpower was 800 workers. The local area--defined as requiring a commute of less than 50 miles--was the source of 40 percent of the construction work force, and 60 percent were from outside the local area (Kaminarides 1977).

Housing

Independence and Jackson counties have a large percentage of substandard housing. Various local communities have rehabilitation or demolition programs.

Local communities, such as Batesville and Newport, have active housing authorities to provide low rent housing for the elderly. The Batesville Housing Authority presently has a stock of 74 duplex units and is constructing a 50-unit "mini-rise" apartment complex. While there is public agency activity in housing rehabilitation and construction for elderly and low- and moderate-income groups, no public planning effort has been made to accommodate construction-worker demand for housing.

It is difficult to arrive at a precise count of housing units in the area. The latest official housing inventory for Independence and Jackson counties comes from the 1970 census, at which time there were 7991 housing units in Independence County. Of these, 5631 were owner-occupied and 2109 were renter-occupied. The rental vacancy rate was 7.2 percent. Jackson County had a total of 6712 housing units. There were 3849 owner-occupied units and 2760 renter-occupied units. The rental vacancy rate was 3.6 percent.

In Independence and Jackson counties as a whole, 90 percent of the housing units were in single-family dwellings, 6.2 percent were in

multiple-family units, and 3.6 percent were in mobile homes. The vacancy rate for year-round units was 7 percent.

Approximately 470 new units were constructed in Batesville (Independence County) between 1970 and 1977, and in 1977 there were about 2820 total units. In Newport, 415 new housing units were constructed during the same period, but at the same time 121 substandard units were demolished, making a net increase of 294 and a total housing stock of about 2966. Despite these increases, however, by 1977 the availability of rental units in Batesville and Newport (in either single units or multiple units) was "practically nonexistent" (Kaminarides 1977). This is still true in 1980.

Construction of the AP&L Independence power plant began in fall 1979. Housing availability was an immediate problem in the communities of Newark and Batesville. Newark, some two and a half miles from the plant site, has an estimated population of 1000 (up from 849 in 1970) and the tightest housing market. Occupancy rates in Batesville and Newark are at 97 to 98 percent, and rents have been rising since construction startup. "Housing is scarce," admits John Baker, executive director of the White River Regional Housing Authority, "but no one is sleeping in tents."

A few new apartment buildings recently have been constructed in Batesville and Newport, but the number of units is unknown.

Two new mobile home parks with a combined 100 new spaces have just been constructed in Newark, and two more are planned for construction. One will have 100 spaces; the size of the other is unknown. As of 1980, Newark had passed an ordinance regulating the development of mobile home parks (McCartney 1980).

The county study area has a total of 512 hotel or motel rooms. Independence County has 330 hotel and motel rooms, 250 of which are in Batesville. Jackson County has 182 hotel and motel rooms, 152 of which are in Newport. Turkerman, east of Newport, has the other 30 units (Kaminarides 1977, p. 57).

Public Services

Water resources and distribution systems in the area are generally adequate to serve increased population in the 1980s, and capable of expansion (Kaminarides 1977, p. 59). The community of Newark is served by four wells, and--according to Treasurer and Vice Mayor Henry McCartney--the water supply is adequate and can meet increased demands. Batesville is expanding both its water and sewer systems. The new capacity should be adequate to serve the population through the late 1980s. Because Newark's sewer system was built with considerable excess capacity, it is expected to handle 50 percent more load than it does presently, without requiring the construction of additional plant capacity.

A key highway is being reconstructed in the area. District 5 of the Arkansas Highway Department is in the process of reconstructing 15 miles of Route 69, which is the main road from Batesville to Newark and the AP&L plant site. The project had been planned prior to the initiation of the power plant construction; even though construction workers make heavy use of the highway, it would have been reconstructed regardless of the power plant construction. The reconstruction is supposed to be completed about the end of 1981 (Chaney 1980).

No other highway projects are planned for the Newark area or Independence County, but the state highway department is building US Route 67 to four-lane interstate standards, from Bald Knob to Newport. When complete to Newport, Route 67 will reduce the one-and-a-half-hour driving time from Little Rock.

There are 15 separate school districts in Independence and Jackson counties. In school year 1979-1980, the Batesville, Newark, and Newport school districts have experienced the greatest increase of new students. Most of these are children of in-migrant construction workers and others attracted to the area by new employment opportunities (e.g., Arkansas-Eastman). Expenditure per pupil, student/teacher ratio, debt, and borrowing power for each of these are shown in Kaminarides 1977, pp. 73-79. Kaminarides points out the "excellent financial condition" (low debt and borrowing power in excess of needs) of these three and the other school districts in the impact area (p. 133).

School enrollments in the Newark School District have increased sharply--by 42 percent as of November 1, 1979. Superintendent Billy Boyle estimated that 30-35 percent (100-125 students) of the growth is directly related to the plant (Batesville Guard 1980, p.1). As a temporary measure, the Newark School District is using portable classroom buildings to handle the new students; however, a new elementary school is under construction.

Future financing operating or capital expenditures should be no problem for the Newark School District, as the AP&L plant is located in the district. Revenues from property taxes on the new AP&L plant would begin to accrue to the Newark School District, making it one of the wealthiest in the county (McCartney 1980).

In 1980, enrollments in Batesville School District were up 42 percent over 1979, but just how much of this increase is because of AP&L's plant is unknown. The Batesville school district board considered the potential growth effects of the AP&L plant and the new Arkansas-Eastman project when it planned ahead for five years. The major capital expenditure planned is for a new junior high school. District Superintendent Bill Coop believes that the Batesville school

district can handle the expected enrollment increases from these projects in the next five years (Batesville Guard, 1980).

As of 1980, the Newport schools had experienced fewer new enrollments because of the AP&L plant construction than had the Newark and Batesville schools. Newport School Superintendent John Mullins estimated that only 12 new students were directly related to the AP&L plant construction (Batesville Guard, 1980).

Police services in the area were seen as less than adequate in 1980. Staffing levels of police departments and the sheriff's department in Independence County were below the perferences of local officials. While there had been no increase in the number of incidents, local officials believed that there would be increased demand for police services as the construction work force at the AP&L plant grew to 600 or more in the summer of 1980.

In addition to the chief and assistant chief, the Batesville Police Department has 10 officers, 16 staff members, and 5 dispatchers. Three more officers are needed right now, and the department probably will hire one or two men before the end of 1980 (Officer Harold Rorex 1980).

The Independence County Sheriff's Department, headquartered in Batesville, has six regular deputies and three combination city marshall-deputy sherrifs in the smaller communities. Citing "financially troubled times," Sheriff Newall Barber says that there will be no increase in staff until revenues begin to come in from the new AP&L power plant. Newark has two city policemen.

The Jackson County Sheriff's Department has six deputies working out of the Newport headquarters, plus four resident deputies in smaller communities. The Newport police department has 11 policemen (Kaminarides 1977, p.70).

Fire protection in the three communities generally is adequate. Newark City Treasurer Henry McCartney claims that Newark's fire department is very good for a community of Newark's size, and that it has good volunteer firemen and a good pumper (McCartney 1980). Only Newark was identified as needing any additional staff (one paid firefighter) during construction of the power plant (Kaminarides 1977, p. 132).

Hospital bed capacity and health manpower in the area are "generally adequate" to accommodate additional demands generated by growth during power plant construction and operation (Kaminarides 1977, p. 132).

PROJECT COMPONENTS

The ETSI Project components in the Independence area are:

- Two 2.5-MMTA dewatering plant units at the Independence site
- Independence lateral coal slurry pipeline (16-inch O.D.) from Atkins Junction to the site

ETSI PROJECT IMPACT ON INDEPENDENCE STUDY AREA

Construction and operation of the Independence dewatering plant would be the same under the market alternative and pipeline-barge alternative as it would under the proposed action.

Construction

Schedule and Personnel. The first dewatering plant unit would be built in 1983 and 1984, with completion in the fourth quarter of 1984. Construction of the second unit would follow by one year, with completion at the end of the fourth quarter in 1985 (Table 5E-3).

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TABLE 5E-3

CONSTRUCTION WORK FORCE DEMAND, INDEPENDENCE SITE

Components	1981 1	1981 2	1981 3	1981 4	1982 1	1982 2	1982 3	1982 4	1983 1	1983 2	1983 3	1983 4	1984 1	1984 2	1984 3	1984 4	1985 1	1985 2	1985 3	1985 4
Independence[1] Dewatering Plant Units 1 and 2									7	46	88	139	159	152	130	103	67	56	38	18
Independence (16")[2] Lateral Pipeline											260									
Subtotal									7	46	348	139	159	152	130	103	67	56	38	18
Independence ETSI Components[3] Steam Electric Station Units 1 and 2	685	880	955	890	705	575	605	690	730	780	760	680	570	385	215	90				
Aggregate Independence Study Area									737	826	1108	819	729	537	345	193	67	57	39	18

[1] For a 5.0 MMTA dewatering plant with two units to come on line at different times, assumes 70 percent of the work effort is expended in the first construction period, as all the plant layout and concrete work is done then. Only additional centrifuges need be installed in the second construction period, requiring 30 percent of total effort.

[2] US EPA EIS Independence Steam Electric Generation Station, pp.112 and 113.

[3] Bob Walsh, Brown & Root's project manager for the Independence Power Plant, states that the peak manpower loading for the power plant will probably be 855 (100 men fewer than originally shown), but that schedule will not change much.

Dewatering plant peak construction employment would be about 160 in the first quarter of 1984. Assuming that pipeline spread V would start at Independence and move toward Atkins Junction, 260 pipeline construction workers would be building the 16-inch Independence lateral slurry pipeline in Independence County in the third quarter of 1983.

The two power plant units at the Independence Steam Electric Station are under construction and are scheduled to go on line in July 1983 and July 1985.

The construction manpower loadings for the ETSI dewatering plant units and the Independence Station power plant units (Table 5E-3) show the timing and magnitude of the manpower demands of each project independently and of the two combined. The manpower peak for the dewatering plant units would occur some two and a half years after the third quarter 1981 peak manpower loading for the power plant units.

The aggregate peak manpower loading for the fixed-site construction (dewatering plant and power plant) is expected to be about 850 in the third quarter of 1983. With the 260-worker pipeline spread expected in the area during the third quarter of 1983 (Figure 5E-1), the combined construction manpower on these projects should be about 1100 persons. This peak would occur two years after the manpower peak of 995 predicted by AP&L for the power plant units in the third quarter of 1981.

Employment and Population: Changes Caused by ETSI. The principal determinant of socioeconomic impact on the local area during construction is the number of nonlocal construction workers who are expected to move into the area during the construction period. This figure makes it possible to estimate increases in secondary employment and population.

A key factor is the mix, or ratio, of local to nonlocal workers expected to be in the construction work force. In rural Arkansas, the ratio of local to nonlocal construction workers for large projects has been around 40 percent local to 60 percent nonlocal. This ratio was observed in the construction of the Arkansas-Eastman plant (Kaminarides 1977).

However, the ETSI dewatering plant is expected to have a considerably smaller peak work force (159) than the power plant (955), and the timing of the dewatering plant peak construction manpower loading is expected to occur two years after the peak at the Independence power plant. Therefore, the percentage of local construction workers who work on the dewatering plant is likely to be considerably higher than for those working on the power plant. Many of the nonlocal construction workers who originally moved into the area to construct the power plant are expected to become local residents. As the manpower demand on the power plant declined, many construction workers who are local (if not necessarily long-term) residents would become available to work on the dewatering plant. Assuming that the decline in employment on the power plant would produce an available pool of construction workers in Independence County, most of the construction jobs on the dewatering plant would likely be filled by persons already residing in the local area. On this basis, it is assumed that 80 percent would be local and 20 percent would be nonlocal.

Secondary employment as a result of Independence dewatering plant construction is estimated to be about 20 persons (Table 5E-4) during the construction period. Total direct and secondary employment attributable to the dewatering plant should be about 180 persons. Most or all of the estimated 20 new secondary jobs probably would be taken by locals, although some family members of construction workers might take some service jobs.

Table 5E-4

ESTIMATED EMPLOYMENT AND POPULATION INCREASES DURING CONSTRUCTION
INDEPENDENCE DEWATERING PLANT

EMPLOYMENT	
Direct Employment	
Peak Construction Work Force	159
x assumed percent nonlocal[1] (20%) = nonlocal direct construction employment (32)	
Secondary Employment	
nonlocal direct construction employment (32) x secondary employment multiplier[2] (.6) = secondary employment (19)	19
secondary employment (19) x assumed percent nonlocal[1] (0)	
Total Employment	178
POPULATION	
nonlocal direct construction employment (32) x percent single (40%)[2] = nonlocal direct singles	13
nonlocal direct construction employment (32) x percent with families (60%)[2] = (19) x average family size (3.7)[2] = nonlocal direct with family members	71
nonlocal secondary employment (0) x percent single (50%)[2] = nonlocal secondary singles	0
nonlocal secondary employment (0) x percent with families (50%)[2] = (0) x average family size (3.7)[2] = nonlocal secondary with family members	0
Total New Nonlocal Population	84

[1]Assumptions based on review of labor force availability and experience with other construction projects.

[2]Adopted from HUD 1976, p. 5.

Population increases attributable to the Independence dewatering plant construction are expected to peak at about 85 persons in the first quarter of 1984: 10 to 15 single construction workers, and 20 with families of 3.7 persons each, adding to 70 (Table 5E-2).

An estimated 130 nonlocal pipeline construction workers are expected in the area in the third quarter of 1983. If 16 percent brought families with an average size of 2.8, population increase for that quarter would be about 170 persons (Table 6-3).

Housing. About 25 to 35 housing units would be necessary to accommodate the in-migrant construction workers who work on the dewatering plant, and their families. In-migrant construction workers usually prefer mobile homes. This preference is a function of the workers' disposable income for housing expenditures, and the speed with which mobile homes can be constructed and trucked to respond to rapid, short-term increases in housing demand.

At the start of power plant construction in 1980, four new mobile home parks with more than 200 spaces were under construction, or proposed in or near the community of Newark. There should be no problem providing additional mobile home accommodations for the nonlocal population associated with the ETSI dewatering plant construction.

Nonlocal mobile pipeline construction workers are expected to demand about 80 transient housing units (hotel, motel rooms, short-term apartments, and mobile homes) in the the third quarter of 1983 (Table 6-3). Since the total supply of hotel and motel units in the two-county area is 512 (Kaminarides 1977), the housing needs of the pipeliners could be met locally, depending upon aggregate demand.

Public Services. Public services generally are in good fiscal condition, and the increased demand from the ETSI-related population is small. Therefore, no significant increased demand or stress on local public facilities and services is expected from nonlocal population as a result of construction of the Independence dewatering plant.

Operation

Personnel. The Independence dewatering plant would employ about 34 permanent operation and maintenance personnel (Table 5E-5).

Employment and Population: Changes Caused by ETSI. The 34 new permanent jobs would lead to about 37 new secondary jobs locally, assuming an employment multiplier of 1.1. Permanent population increase during the operation phase, calculated to be about 160 persons (Table 5E-5), would be insignificant when compared to the population of the two counties (45,425 in 1975).

Housing. The small increase in permanent population that is expected in the area should have no significant effects on the local housing market.

Public Services. No significant increased demand or stress on local public facilities and services is expected as a result of operation of the Independence dewatering plant.

Public Finances. As the pipeline and dewatering plant were completed, they would increase county assessed values and provide Independence County and its specific taxing districts with a new source of property tax revenues (Table 5E-6). Since the system would not occupy Jackson County, it would not receive any tax revenue benefits from the project.

TABLE 5E-5

EMPLOYMENT AND POPULATION INCREASES DURING OPERATION
INDEPENDENCE DEWATERING PLANT

EMPLOYMENT	
Direct Operation and Maintenance Employment	34
• Assume 100 percent nonlocal as worst case	
Secondary Employment	
nonlocal direct employment (34) x secondary employment multiplier[1] (1.1) = secondary employment	37
Nonlocal Secondary Employment	
secondary employment (37) x assumed percentage nonlocal[2] (80%) = nonlocal secondary employment (30)	
Total Employment	71
POPULATION	
nonlocal direct employment (34) x percent single[3] (40%) = nonlocal direct singles	14
nonlocal direct employment (34) x percent with families (60%) = (20) x average family size[3] (3.7) = nonlocal direct with family members	75
nonlocal secondary employment (30) x percent single (50%) = nonlocal secondary singles	15
nonlocal secondary employment (30) x percent with families (50%) x average family size (3.7) = nonlocal secondary with family members	56
Total New Population	160

[1]Secondary employment multiplier adopted from HUD 1976, p. 5.

[2]Mix of locals and nonlocals taking secondary employment adopted from HUD 1976, p.5.

[3]Percent single, percent with families and family size factors adopted from HUD 1976, p.5.

TABLE 5E-6

ESTIMATES OF ETSI PROPERTY TAXES AND COMPARISON WITH COUNTY PROPERTY TAXES 1976/77, INDEPENDENCE STUDY AREA (Proposed Action, Market and Barge Alternatives)

Project Component/ County	Estimated ETSI Property Tax[1] (1980 dollars) Assessed Valuation of ETSI Components (x $1000)	Tax Factor (percent)	Revenues (x $1000)	County Local Property Tax[2] 1976/77 Assessed Valuation Subject to tax (x $1000)	Property Tax Revenues (x $1000)	Evaluation of ETSI Revenues[3] (1980 dollars) ETSI Assessed Valuation plus 1976/77 Assessed Valuation (x $1000)	ETSI Assessed Valuation as a Percentage of 1976/77 Assessed Valuation (x $1000)	Sum ETSI Revenues and 1976/77 Revenues (x $1000)	ETSI Revenues as a Percentage of 1976/77 Revenues
						1 + 4	1 ÷ 4	3 - 5	3 ÷ 5
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Pipeline and Pump Stations									
Independence	5,400	1.36	73	30,860	2035	30,260	17	2108	4
Dewatering Plants									
Independence	26,700	1.36	363	30,860	2035	57,560	87	2398	18
TOTAL	32,100	1.36	436	30,860	2035	62,960	104	2471	21

[1] ETSI 1980. Assessed valuation and property taxes by county were estimated by ETSI for the EIS by extrapolating previously developed unit cost estimates for components and should in no way be construed as representing the cost estimate for the components. Values shown on this table were derived by ETSI as follows:

Sum of estimated cost of components in county x statewide ratio of assessed value to market value = assessed valuation of ETSI components x property tax rate (percent) assumed for county = estimated ETSI property taxes (in 1980 dollars)

[2] U.S. Bureau of the Census, 1977 Census of Governments.

[3] Column 6 is the sum of estimated ETSI Assessed Valuation (AV) as of 1980 and the 1976/77 total county assessed valuation (i.e., Column 6 = Column 1 plus Column 4).

Column 7 is the ratio of the ETSI AV to the 1976/77 total county AV expressed as a percentage (i.e., Column 7 = Column 1 divided by Column 4).

Column 8 is the sum of the estimated ETSI property tax revenues and the 1976/77 total county property tax revenues (i.e., Column 8 = Column 3 plus Column 5).

Column 9 is the ratio of the estimated ETSI revenues to the 1976/77 total county property tax revenues expressed as a percentage (i.e., Column 9 = Column 3 divided by Column 5).

Abandonment

Upon abandonment, the operation and maintenance positions at the site would be eliminated. There would be some short-term "construction" employment during demolition.

Property tax revenues, already reduced by the depreciation of the capital improvements, would decline further. Assessed value would equal salvage value of the remaining improvements plus the value of the land.

CUMULATIVE EFFECTS

The Independence Steam Electric Station, which the ETSI Independence dewatering plant would supply, is presently under construction. Construction is expected to last until the end of 1984 (Table 5E-3). Socioeconomic effects of this power plant are occurring in 1980, including in-migration of construction workers and families, increased demand for housing (leading to increases in rents), and increased school enrollments. The power plant peak manpower demand would be between 855 and 955 in the third quarter of 1981--well before the start of the ETSI dewatering plant construction. Manpower demand on the power plant would be about 570, declining when the ETSI dewatering plant reached its peak manpower loading of 159 in the first quarter of 1984. Because the time of peak construction-period-related impacts would have occurred two years before, the 1983 and 1984 ETSI dewatering plant construction worker demand would not contribute to a higher aggregate peak manpower demand, which might cause "cumulative" effects. Rather, it would come at a time when construction employment otherwise would be declining sharply. Thus the ETSI Independence dewatering plant construction would extend the demand for construction workers and soften the rate of decline in construction employment. As a result, no cumulative effects would be expected.

SOCIOECONOMIC IMPACT SUMMARY: AREA 10 - INDEPENDENCE

Alternatives: Valid for proposed action, market alternative, and pipeline-barge alternative.

BASELINE CONDITIONS

Slurry pipeline (16-inch O.D.) would be constructed to (5 MMTA) dewatering plant to serve power plant under construction near Newark, Arkansas (estimated population 1000), about 1.5 hours drive northeast of Little Rock. Communities of Batesville (9000) in Independence County and Newport (8000) in Jackson County are experiencing in-migration of construction workers and population. Housing is tight (2 percent vacancy rate, areawide) but more than 200 mobile home spaces are being constructed in Newark.

PROJECT COMPONENTS AND ACTIVITIES

- Independence lateral (16-inch O.D.): Atkins Junction to Independence; would require 260 mobile construction workers in third quarter 1983

- Independence dewatering plant (5 MMTA): to be built in 1983; 1984-1985 peak manpower demand of 160 first quarter 1984

SOCIAL AND ECONOMIC EFFECTS

(Changes in local conditions due to ETSI, and significance)

Construction

Most (80 percent) fixed-site construction of the Independence System Electric Station. Minor in-migration of nonlocal construction workers is possible, but most likely employment opportuniities at the dewatering plant would mean that some of the nonlocals who have moved into the area would stay longer. Pipeliners would generate a significant short-term (two- to four-month) demand for hotel and motel rooms and rental apartments.

Operation

An estimated 37 service jobs would be generated by the 34 direct permanent operation jobs. A permanent population increase of 160 in the area would generate only minor demands for housing and public services. Property tax revenues would benefit Independence County and the local Newark school district.

Abandonment

Eventual loss of direct and possibly secondary employment; loss of property tax revenues.

CUMULATIVE EFFECTS

No significant adverse cumulative effects. Construction manpower demand would follow peak demand at the power plant, and would alternate the drop-off in construction employment and the out-migration of construction workers.

SOCIOECONOMIC IMPACT SUMMARY TABLE, INDEPENDENCE, ARKANSAS AREA (AREA 10)
(Alternatives: Same for Proposed Action, Market and Pipeline-Barge Alternatives)

Social/Economic Indicator	Baseline Conditions		Construction Impacts			Operation Impacts	
EMPLOYMENT	(1974) Total	Contract Construction	Fixed-site:	160	17% of power plant peak, small in-migration	Direct:	34
	Independence 9,413	190	Local (.8):	128		Secondary:	37
	Jackson 7,669	375	Local (.2):	32		Total	71
	2-county area 17,082	565	Mobile:	260			
			Local (.5):	130			
			Nonlocal (.5)	130			
POPULATION	1975		Fixed-site:	85	0.1% of 2-county total	160	0.3% of 1975 2-county population
Independence	24,232						
Jackson	21,193						
2-county total	45,3425		Mobile (1984)	170			
HOUSING	Housing Units	Hotel/Motel Rooms (1977)					
Independence (1970)	7991	330	Fixed-site (1984)	35	0.2% of 1970 2-county total		
Batesville (1977)	2820	250					
Jackson Co. (1970)	6712	182	Mobile (1983)	80	15.6% of 1977 motel stock. Large short-term demand		Insignificant
Newport (1977)	2966	152					
2-county total (1970)	14,703	(1977) 512					
PUBLIC SERVICES	Batesville schools have capacity for 5 years Newark using portable classrooms building new elementary school Newark has sewage capacity for 500+ more people		Insignificant				Insignificant
PROPERTY TAX BASE AND REVENUES	1976/1977 Assessed Valuation x $1000	1976/1977 Property Tax Revenues x $1000				Estimated ETSI Revenues (1980) x $1000	ETSI Revenues as a Percentage of 1976/1977 Revenues
Independence County	30,860	2,035				363	3

5.F WHITE BLUFF: AREA 11

The White Bluff dewatering plant would be built to the same 5.0 MMTA capacity and according to the same construction schedule under the proposed action, the market alternative, or the pipeline-barge alternative.

LOCAL STUDY AREA

The site of the proposed 5.0 MMTA White Bluff dewatering plant is in Jefferson County, Arkansas, between the cities of Pine Bluff and Little Rock. The White Bluff study area includes Saline and Pulaski counties (the Little Rock-North Little Rock SMSA) and Jefferson County (Pine Bluff SMSA). Pine Bluff is 20 miles from the dewatering plant site, and Little Rock is about 25 miles from the site (Figure 5-6).

According to Superintendent Julius Brown of the White Hall School District (where the White Bluff power plant is located), very little in-migration was associated with the construction work force of 1100 during construction of the White Bluff Power Plant in 1978, 1979, and 1980 (Brown 1980). Therefore, since no population or housing impacts are expected to be associated with the proposed dewatering plant, few social and economic data are presented here.

BASELINE CONDITIONS

Population and Employment

The 1975 population of Pine Bluff was about 54,650, and that of Little Rock was approximately 141,140. The total 1975 population in the three-county study area was roughly 432,200 (Table 5F-1).

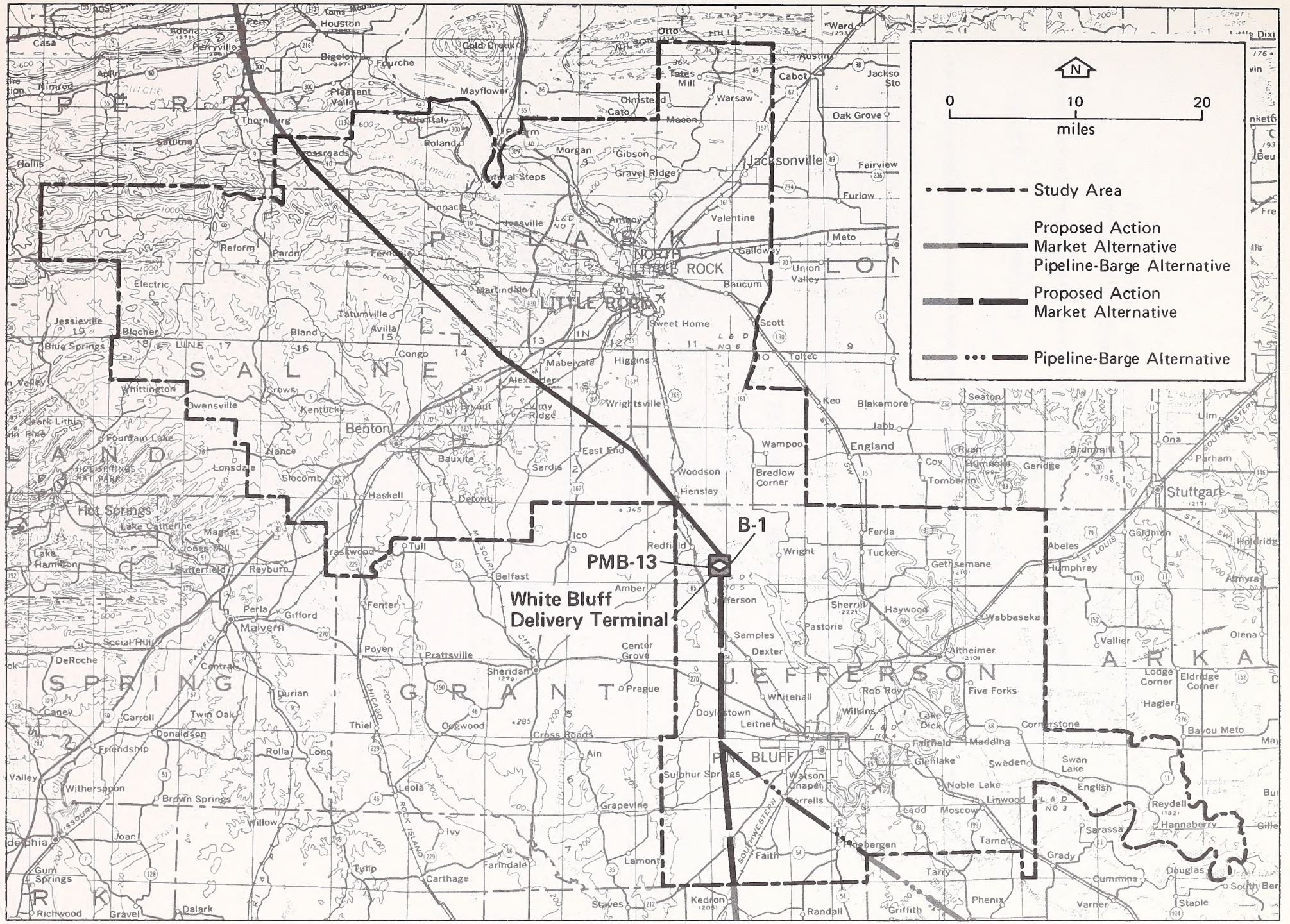

Figure 5-6. WHITE BLUFF LOCAL STUDY AREA

TABLE 5F-1

POPULATIONS OF COUNTIES AND COMMUNITIES WITHIN
COMMUTING DISTANCE OF THE WHITE BLUFF DEWATERING PLANT

County	Community	Census 1970 Population	1975 Population	Population Change 1970-1975 (percent)	Approximate Distance from the Site (miles)
Saline		36,107	40,177	11.3	N.A.
Pulaski		287,189	308,294	7.4	N.A.
	Little Rock	132,483	141,143	6.5	25
	North Little Rock	62,208	61,768	- .7	30
Jefferson		85,329	83,750	- 2.0	N.A.
	Pine Bluff	57,389	54,631	- 4.8	20
Total 3 County Area		408,625	432,221	5.8	N.A.

Source: US Bureau of the Census 1978

The Little Rock and Pine Bluff SMSAs have a large construction labor pool (Table 5F-2). In 1978 through 1980 this pool supplied most of the construction workers (1100 at peak) for Arkansas Power and Light Company's White Bluff Power Plant. No significant in-migration of nonlocal construction workers occurred (Brown 1980).

Housing

Since no in-migration of nonlocal workers is expected for the White Bluff dewatering plant and pump station, there would be no significant demand for housing as a result of fixed-site construction activities in the area.

Pine Bluff has more than 450 hotel and motel rooms and over 500 rental apartment units, with a high rental vacancy rate (Pine Bluff Chamber of Commerce 1980).

Public Services

Because schools and other public services would not be affected, no data are presented here.

PROJECT COMPONENTS

The project components in this area are:

- Main slurry pipeline through Pulaski, Saline, and Jefferson counties (36-inch O.D. north of White Bluff, 32-inch O.D. south of White Bluff)
- White Bluff dewatering plant (5 MMTA) in Jefferson County
- Pump Station No. 13 at White Bluff site in Jefferson County

TABLE 5F-2

EMPLOYMENT BY OCCUPATION, 1970

	Jefferson Co.	Pulaski Co.	Saline Co.	3-County Total
Total Employed 16 and over	27,553	108,980	13,286	149,819
Professional, Technical and Kindred	3,477	16,635	1,497	21,609
Managers and Administrators	2,509	10,971	753	14,232
Sales	1,625	9,801	569	11,995
Clerical	4,099	20,780	1,761	26,640
Craftsmen, Foremen, and Kindred	3,751	14,365	2,801	20,917
Operatives	3,557	12,382	2,568	18,507
Transport Equipment Operatives	1,523	4,524	717	6,764
Laborers	1,485	4,146	754	6,385
Farmers, Farm Managers	486	392	55	933
Farm Laborers, Foremen	940	678	84	1,702
Service Workers	3,070	11,844	1,621	16,535
Private Household Workers	1,031	2,462	106	3,599

Source: US Bureau of the Census, 1970
1970 Census of Population

ETSI PROJECT IMPACT ON WHITE BLUFF AREA

Construction

Impact calculation procedures are explained in the introduction to this chapter.

Schedule and Personnel. The construction manpower demand for the project components in the area would be generated by the dewatering plant, the pump station, and the coal slurry pipeline. The construction manpower loading and the schedule for the dewatering plant and pump station would be as shown in Table 5F-3. Dewatering plant construction would begin in the first quarter of 1983 and be completed in the fourth quarter of 1984. Pump station construction would begin about the second quarter of 1983 and be completed in the fourth quarter of 1984. Peak manpower demand is estimated to be about 260 in the first quarter of 1984.

Unit #1 and Unit #2 of the White Bluff power plant are expected to be completed and on line in March 1980 and March 1981, respectively. The maximum manpower loading for power plant construction was approximately 1100. If the dewatering plant, pump station, and pipelines are constructed at the White Bluff site, the two power plant units already will have been constructed and on line for approximately a year and a half. Therefore, the manpower loadings would not be additive.

The construction work force of the White Bluff site would commute daily from the Little Rock and Pine Bluff areas. No in-migration of construction workers, significant secondary employment, or significant population increase is expected.

TABLE 5F-3

CONSTRUCTION MANPOWER DEMAND:
WHITE BLUFF AREA

	Year/Quarter							
	1983				1984			
	1	2	3	4	1	2	3	4
White Bluff Dewatering Plant	10	65	125	199	223	188	133	61
Pump Station No. 13		20	49	49	39	39	38	30
Subtotal ETSI Fixed-Site Components	10	85	174	248	262	227	171	91
Main Slurry Pipeline				550	550			
White Bluff Steam Electric Station[1]								
Unit #1 On line March 1980								
Unit #2 On line March 1981								
(Maximum Work Force was 1100)								

[1]Cox 1980.

Pipeline spread V would construct the main slurry pipeline segments north and south of the White Bluff site. The segment north of the site probably would be constructed in the fourth quarter of 1983, and the segment south of the White Bluff site would be constructed in the first quarter of 1984. Total spread work force would be about 550. Half (275) of the pipeline construction crew is expected to come from the local area; the other half would be nonlocals.

Employment and Population: Changes Caused by ETSI. The dewatering plant construction is expected to cause no significant changes in population and employment in the area (Table 5F-4).

The main slurry pipeline construction would cause about 275 mobile pipeline construction workers to in-migrate temporarily to the Little Rock-Pine Bluff area in late 1983 through early 1984. The nonlocal, transient population would be about 358 persons (Table 6-3). However, in an area of over 432,000 persons, this temporary population increase is not likely to be noticed.

Housing. Fixed-site construction activities at the White Bluff site would have no effect on the local housing market. Mobile pipeline construction workers would require an estimated 165 short-term housing units (motels/ apartments) (Table 6-3), but this demand could easily be met in cities along the pipeline alignment (e.g., Little Rock and Pine Bluff). Pine Bluff alone has over 450 motel rooms.

Public Services. Neither the dewatering plant nor the pipeline construction projects would have any significant effect on local public facilities and services.

TABLE 5F-4

ESTIMATED EMPLOYMENT AND POPULATION INCREASES DURING CONSTRUCTION OF WHITE BLUFF DEWATERING PLANT

EMPLOYMENT	
Direct Employment	
Peak Construction Work Force x assumed percentage nonlocal[1] (0) = nonlocal direct construction employment (0)	260
Secondary Employment	
Nonlocal direct construction employment (0) x secondary employment multiplier[2] (.6) = secondary employment (0)	0
Secondary employment (0) x Assumed percent nonlocal[1] (0)	
Total Employment	260
POPULATION	
Nonlocal direct construction employment (0) x percent single (40%)[2] = nonlocal direct singles	0
Nonlocal direct construction employment (0) x percent with families (60%)[2] = (0) x average family size (3.7)[2] = nonlocal direct with family members	0
Nonlocal secondary employment (0) x percent single (50%)[2] = nonlocal secondary singles	0
Nonlocal secondary employment (0) x percent with families (50%)[2] = (0) x average family size (3.7)[2] = nonlocal secondary with family members	0
Total New Nonlocal Population	0

[1] Assumptions based on review of labor force availability and experience with other construction projects.

[2] Adapted from HUD 1976, p. 5.

According to Superintendent Julius Brown of the White Hall School District, there was very little increase in population or demand for local services during construction of the White Bluff Power Plant (1100 workers at peak). Of the 26,000 students enrolled in the district's schools, Mr. Brown estimates that a maximum of 150 were children of persons employed by Brown and Root, the power plant general contractor. He states that the local assessed valuation has increased to the benefit of the school district and other local public service providers.

Operation

The operation and maintenance personnel required for the White Bluff dewatering plant and pump station are listed in Table 5F-5.

Employment and Population: Changes Caused by ETSI. The 109 new jobs at the White Bluff site would in turn lead to the creation of secondary jobs, locally, and an increase in the local population.

Assuming that all the new jobs would be taken by nonlocals (a worst-case assumption), about 120 secondary jobs would be generated (Table 5F-5). These new employees and their families would be distributed between the Little Rock and Pine Bluff SMSAs. Total permanent area project employment is expected to be about 229.

A total population increase of about 511 is projected as a result of the new permanent direct and secondary jobs provided at the White Bluff site.

Housing. There would be no significant effect on the local housing market.

Public Services. There would be no significant effect on demand for public services.

TABLE 5F-5

ESTIMATED EMPLOYMENT AND POPULATION INCREASES DURING OPERATION OF THE WHITE BLUFF DEWATERING PLANT

EMPLOYMENT	
Direct Operation and Maintenance Employment	109
Assume 100 percent nonlocal as a worst case	
Secondary Employment	
Nonlocal direct employment (109) x secondary employment multiplier[1] (1.1) = secondary employment	120
Nonlocal Secondary Employment	
Secondary employment (120) x assumed percentage nonlocal[2] (80%) = nonlocal secondary employment (96)	
Total Employment	229
POPULATION	
Nonlocal direct employment (109) x percent single[3] (40%) = nonlocal direct singles	44
Nonlocal direct employment (109) x percent with families (60%) = (65) x average family size[3] (3.7) = nonlocal secondary singles	242
Nonlocal secondary employment (96) x percent single (50%) = nonlocal secondary singles	48
Nonlocal secondary employment (96) x percent with families (50%) x average family size (3.7) = nonlocal secondary with family members	178
Total New Population	512

[1]Secondary employment multiplier adopted from HUD 1976, p. 5.

[2]Mix of locals and nonlocals taking secondary employment adopted from HUD 1976, p. 5.

[3]Percent single, percent with families and family size factors adopted from HUD, 1976, p. 5.

Property Tax Revenues. The tax base of Jefferson County would be increased by the construction of the White Bluff dewatering plant, the pump station, and the slurry pipeline segments. This, in turn, would increase potential property tax revenues to Jefferson County and its taxing jurisdictions, including the White Hall School District (Table 5F-6).

Abandonment

Upon abandonment, the operation and maintenance positions at the site would be eliminated. There would be some short-term "construction" employment during demolition.

Property tax revenues, already reduced due by the depreciation of the capital improvements, would decline further. Assessed value would equal salvage value of the remaining improvements plus the value of the land.

CUMULATIVE EFFECTS

There would be no cumulative effects.

TABLE 5F-6

ESTIMATES OF ETSI PROPERTY TAXES AND COMPARISON WITH COUNTY PROPERTY TAXES 1976/77
WHITE BLUFF STUDY AREA

	Estimated ETSI Property[1] Tax (1980 Dollars)			County Local Property[2] Tax 1976/77		Evaluation of ETSI[3] (1980 $) Revenues			
	Assessed Valuation of ETSI Components (x $1000)	Tax Factor (percent)	Revenues (x $1000)	Assessed Valuation Subject to Tax (x $1000)	Property Tax Revenues (x $1000)	ETSI Assessed Valuation Plus 1976/77 Assessed Valuation (x $1000) [1+4]	ETSI Assessed Valuation As a % of 1976/77 Assessed Valuation [1÷4]	Sum ETSI Revenues and 1976/77 Revenues (x $1000) [3+5]	ETSI Revenues As a Percent of 1976/77 Revenues [3÷5]
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Pipeline (& Pump Stations)									
Pulaski	20,600	1.42	290	625,061	47,811	645,661	3	48,101	0.6
Saline	9,700	1.42	140	64,063	3,555	73,763	15	3,695	4
Jefferson	30,600	1.34	410	140,938	10,013	171,538	22	10,423	4
Cleveland	14,900	1.30	190	8,484	476	23,384	176	666	40
Dewatering Plant									
Jefferson	26,700	1.34	358	140,938	10,013	40,738	190	10,371	4
Total									
Pulaski	22,600	1.42	290	625,061	47,811	645,661	3	48,101	0.6
Saline	9,700	1.42	140	64,063	3,555	73,763	15	3,695	4
Jefferson	57,370	1.34	768	140,938	10,013	198,238	41	10,781	8
Cleveland	14,900	1.30	140	8,484	476	23,384	176	666	40

[1]ETSI 1980

Assessed Value and property taxes by county were estimated by ETSI by extrapolating previously developed unit cost estimates for components and should in no way be construed as representing the cost estimate for the components. Values shown on this table were derived by ETSI as follows:

Sum of estimated cost of components in county	x	Statewide ratio of assessed value to market value	=	Assessed valuation of ETSI Components	x	Property tax rate (percent) assumed for county	=	Estimated ETSI property taxes (in 1980 $)

[2]US Bureau of the Census, Census of Governments.

[3]Column 6 is the sum of estimated ETSI Assessed Valuation (AV) as of 1980 and the 1976/77 total county assessed valuation (i.e., column 6 = column 1 + column 4).

Column 7 is the ratio of the ETSI AV to the 1976/77 total county AV expressed as a percent (i.e., column 7 = column 1 divided by column 4).

Column 8 is the sum of the estimated ETSI property tax revenues and the 1976/77 total county property tax revenues (i.e., column 8 = column 3 plus column 5).

Column 9 is the ratio of the estimated ETSI revenues to the 1976/77 total county property tax revenues expressed as a percent (i.e., column 9 = column 3 divided by column 5).

SOCIOECONOMIC IMPACT SUMMARY AREA 11: WHITE BLUFF

BASELINE CONDITIONS

White Bluff Site, Arkansas, located between Little Rock (1975 population of over 141,000) and Pine Bluff (about 55,000). Distance of 20-25 miles to either city. Power plant constructed at White Bluff 1978-1980, with peak work force of 1100. Minimal in-migration and impacts associated with power plant construction.

PROJECT COMPONENTS AND ACTIVITIES

- White Bluff dewatering plant (5 MMTA) and pump station: construction 1983-1984, peak work force of 262 in first quarter 1984
- Main slurry pipeline through Pulaski, Saline, and Jefferson counties (36-inch O.D. north of White Bluff, 32-inch O.D. south). Work force of 550 in fourth quarter 1983 and first quarter 1984
- Operation work force of 109 starting in 1984

SOCIAL AND ECONOMIC EFFECTS

(Changes in local conditions due to ETSI, and significance)

Construction

Fixed-site construction work force expected to be entirely local. In-migration of 358 nonlocal pipeline construction workers and families would have an insignificant effect on the area's population, housing, and public services.

Operation

Creation of 109 direct jobs. Estimated generation of 120 secondary jobs. Estimated areawide population increase of 511 persons (less than 0.1 percent of the three-county area population). No significant impacts expected on housing or public services.

Abandonment

Loss of direct and secondary employment; reduction of property tax revenues.

CUMULATIVE EFFECTS

No significant cumulative effects.

WHITE BLUFF, ARKANSAS STUDY AREA IMPACT SUMMARY

Impact Summary Affected Area White Bluff, Arkansas Alternatives: Proposed Action, Market, Pipeline - Barge

Social/Economic Indicator	Baseline Conditions	Construction Impacts	Operation Impacts
Employment	20,917 (1970) 3-county area construction employment	Fixed-site Local 260 1% Nonlocal 0 Mobile Local 275 1% Nonlocal 275	direct: 109 jobs secondary 120 jobs
Population	Saline Co. 40,177 Pulaski 308,294 Jefferson 83,750 3-county area 432,221 (1975)	Fixed-site Nonlocal 0 Not Significant Mobile 358 Not Significant (temporary)	511 persons .1% of 3-county area
Housing	Pine Bluff high rental vacancy; 450 motel units	Fixed site 0 Mobile 165 Not Significant	Not Significant
Public Services	Not Significant	Not Significant	Not Significant

Property Tax Base and Revenues	1976/1977 Assessed Valuation (x $1000)	Property Tax Revenue (x $1000)	ETSI Minimum Tax Revenues 1980 (x $1000)	ETSI Revenues as Percent of 1976/77 Revenues
Pulaski	625,061	47,811	290	.6
Saline	64,063	3,555	140	4
Jefferson	140,938	10,013	768	8
Cleveland	8,484	476	140	40

5.G BOYCE/ALEXANDRIA: AREA 14

The Boyce dewatering plant would be built to the same 1.8 MMTA capacity with the same schedule under both the proposed action and the market alternative. The Boyce plant would not be constructed under the pipeline-barge alternative.

LOCAL STUDY AREA

The site of the proposed Boyce dewatering plant is within the Alexandria (Louisiana) SMSA, which is made up of Grant and Rapides parishes. The local study area includes Rapides, Grant, and Avoyelles parishes (Figure 5-7).

BASELINE CONDITIONS

Population and Employment

The 1975 population of Alexandria was about 49,480. Population in the three-parish area for 1975 was reported as about 173,600 (Table 5G-1).

In December 1979, the Alexandria labor market area (Grant, Rapides, and Avoyelles parishes) had a labor force of 68,600, of which 62,570 were employed. There were 4840 reported unemployed, for an unemployment rate of 6.8 percent (Louisiana Department of Labor 1980).

The latest figures available on construction employment are for 1978; at that time the annual average in the Alexandria area was 3250. Thus, construction workers made up 5.3 percent of the total number employed. This was 3 percent lower than the statewide percentage Table 5G-2).

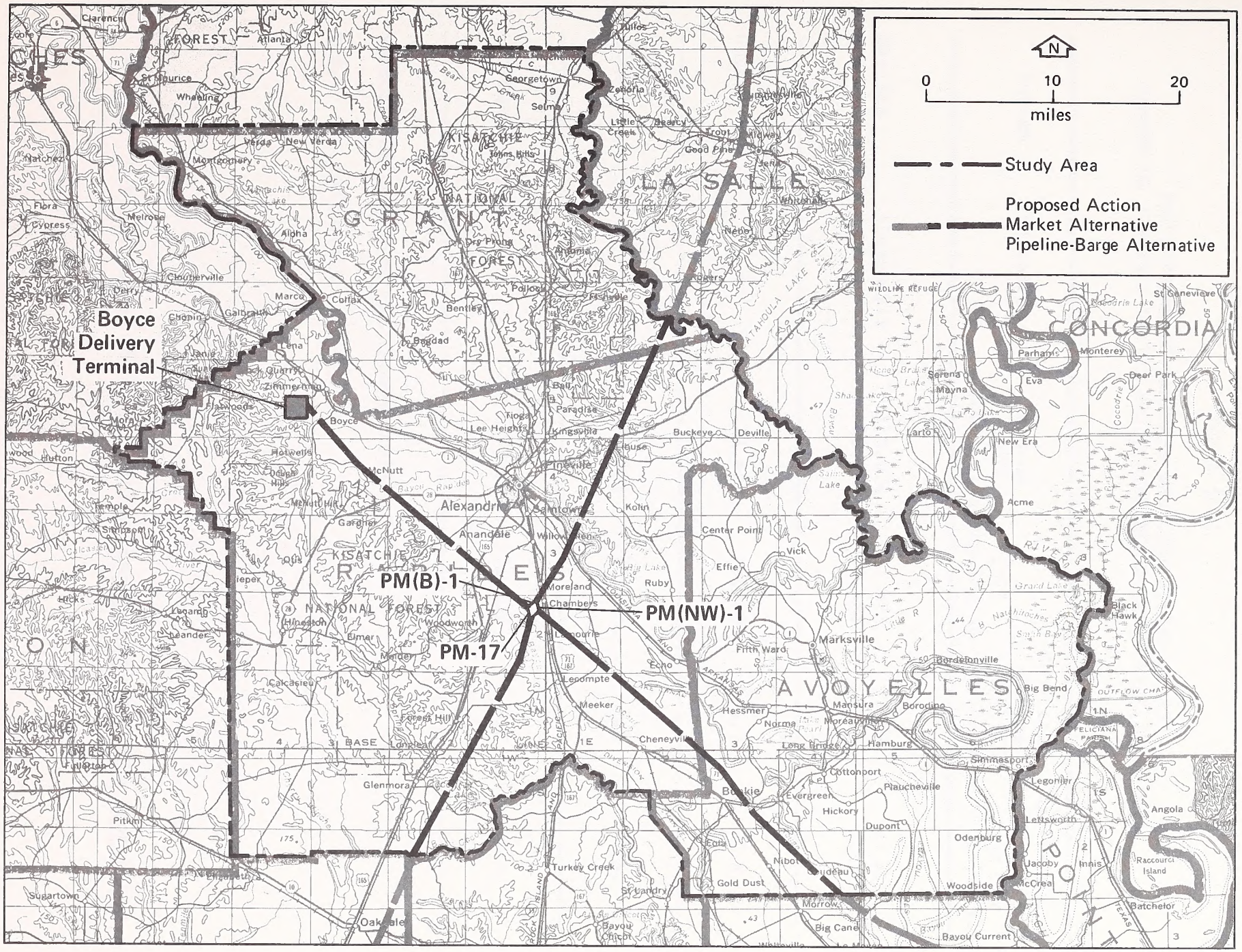

Figure 5-7. BOYCE-ALEXANDRIA LOCAL STUDY AREA

TABLE 5G-1

POPULATIONS OF PARISHES AND COMMUNITIES WITHIN
COMMUTING DISTANCE OF THE BOYCE/ALEXANDRIA DEWATERING PLANT SITE

Parish	Community	Census 1970 Population	1975 Population	Population Change 1970-1975 (percent)	Approximate Distance from the Site (miles)
Rapides	Alexandria	118,078	121,088	2.9	N.A.
		49,587	49,481	-0.2	25
Grant		13,671	14,330	4.5	N.A.
Avoyelles		37,751	38,171	0.6	N.A.
3-Parish Total		169,500	173,589	2.0	N.A.

Source: US Bureau of the Census, 1978

N.A. = not applicable

Source: U.S. Bureau of the Census 1978. County and City Data Book 1977.

TABLE 5G-2

CONSTRUCTION EMPLOYMENT IN THE ALEXANDRIA AREA
(1978)

	Persons	%
Construction Employment	3,250	5.3
All Other Employment	58,071	94.7
Total	61,321	

Source: Louisiana Department of Labor 1980.

For the construction of the Rodemacher power plant at the Boyce site, 634 workers were employed in mid-January 1980 (Simms 1980). The residential distribution of construction workers was:

Parish of Residence	Number of Workers	Percentage
Rapides	346	55
Natchitoches	47	7
Grant	34	5
Vernon	10	2
18 other parishes	less than 10 each	--
Total	634	100

Of those workers, 55 percent resided in Rapides Parish. There was no significant in-migration of nonlocal workers and no related population increase.

Housing

There are approximately 1425 motel units in Alexandria, Louisiana (Alexandria Chamber of Commerce 1980) that could accommodate mobile pipeline construction workers. Since fixed-site construction at Boyce or Alexandria Junction is not expected to cause an in-migration, there would be no impact on local housing. Therefore no housing data are presented here.

Public Services

Construction, operation, and maintenance of the proposed dewatering plant would cause no significant demands on local public services or facilities; thus no data are presented.

PROJECT COMPONENTS

The project components in Grant, Rapides, and Avoyelles parishes are:

- Main slurry pipeline (White Bluff to Alexandria Junction)
- Pump Station No. 17 at Alexandria Junction
  Alexandria Junction to Boyce
  Alexandria Junction to Lake Charles
  Alexandria Junction to New Roads
- Main slurry pipeline (Alexandria Junction to New Roads)
- Lake Charles lateral pipeline
- Boyce lateral pipeline
- Boyce dewatering plant

ETSI PROJECT IMPACT ON THE BOYCE-ALEXANDRIA AREA

Construction

Impact calculation procedures are explained in the introduction to this section.

Schedule and Personnel. The construction manpower demand for the project components would be generated by the dewatering plant, the pump station, and the coal slurry pipeline.

Construction on the 1.80 MMTA Boyce dewatering plant would start in 1983 and be completed by the end of the fourth quarter of 1984. The construction work force would have about 111 workers at peak. The Alexandria Junction pump station would be constructed concurrently and have as many as 49 construction workers at the site. Total manpower requirements at these two sites in the Alexandria region is estimated to peak at 160 in the first quarter of 1984 (Table 5G-3).

TABLE 5G-3

CONSTRUCTION MANPOWER DEMAND:
BOYCE AREA

	1983				1984			
	1	2	3	4	1	2	3	4
Boyce Dewatering Plant[1]	5	32	62	100	111	94	66	30
Pump Station No. 17 (Alex. Jct.)		20	49	49	39	39	38	30
Total ETSI Fixed-Site	5	52	111	149	160	133	104	60
Slurry Pipeline Spread V[2]							550	
Slurry Pipeline Spread VI[3]			390					

[1] Manpower numbers shown for dewatering plant are half of that for a 5.0 MMTA capacity plant; therefore they are conservative.

[2] Assumes that spread V works north to south.

[3] Assumes that spread VI begins at Alexandria Junction and constructs Boyce lateral, northern section (50 mi ±) of Lake Charles lateral and first 50 ± miles of mainline to New Roads in third quarter of 1983, then moves southward to Lake Charles, temporary headquarters for the fourth quarter of 1983.

Two pipeline spreads would be responsible for pipeline segments in the Boyce-Alexandria area. Spread V would construct the segment from White Bluff to Alexandria Junction.

Assuming that the spread would work from north to south, the 550-worker work force would be in the area in the third quarter of 1984. Spread VI would be responsible for the Boyce lateral, the Lake Charles lateral, and the mainline to New Roads. It is assumed that spread VI would begin in the Boyce-Alexandria area and construct, in turn, the Boyce lateral, the northernmost 50 miles of the Lake Charles lateral, and the westernmost 50 miles of the mainline to New Roads before moving on to the other segments. Spread VI probably would be in the Lake Charles area in the fourth quarter of 1983 and then move toward the New Roads site in the first and second quarters of 1984.

Employment and Population: Changes Caused by ETSI. As Table 5G-3 shows, total fixed-site construction employment in the area is expected to peak at around 160 in the first quarter of 1984. With 3250 employed in construction in Grant and Rapides parishes in 1978, all project construction would be filled by local residents. The residential distribution would be similar to that experienced for the Rodemacher site. There would be no in-migration of nonlocal construction workers to work on the fixed-site components. Therefore, employment and population effects from the Boyce dewatering plant and pump station construction would be insignificant (Table 5G-4).

The pipeline segments would be built by pipeline spreads with an assumed local/nonlocal worker mix of 50/50. Thus in the third quarter of 1983, when spread VI would be active in the area, an estimated 195 nonlocal pipeliners would be in the area on a temporary basis. A nonlocal transient population of 254 could be expected.

TABLE 5G-4

ESTIMATED EMPLOYMENT AND POPULATION INCREASES DURING CONSTRUCTION OF BOYCE DEWATERING PLANT

EMPLOYMENT	
Direct Employment	
Peak Construction Work Force x assumed percentage nonlocal[1] (0) = nonlocal direct construction employment (0)	160
Secondary Employment	
Nonlocal direct construction employment (0) x secondary employment multiplier[2] (.6) = secondary employment (0)	0
Secondary employment (0) x Assumed percent nonlocal[1] (0)	
Total Employment	160
POPULATION	
Nonlocal direct construction employment (0) x percent single (40%)[2] = nonlocal direct singles	0
Nonlocal direct construction employment (0) x percent with families (60%)[2] = (0) x average family size (3.7)[2] = nonlocal direct with family members	0
Nonlocal secondary employment (0) x percent single (50%)[2] = nonlocal secondary singles	0
Nonlocal secondary employment (0) x percent with families (50%)[2] = (0) x average family size (3.7)[2] = nonlocal secondary with family members	0
Total New Nonlocal Population	0

[1] Assumptions based on review of labor force availability and experience with other construction projects.

[2] Adapted from HUD 1976, p. 5.

In the third quarter of 1984, when spread V would be working in the area, an estimated 275 nonlocal pipeliners would move into the area on a temporary basis. There would be approximately 358 workers, including their families (Table 6-3).

Central Louisiana Electric Company (CLECO) presently is constructing Rodemacher Power Plant Unit #2. The peak work force was 750 in summer 1980. Construction is expected to be completed and the plant to be on line in 1982, prior to startup of dewatering plant construction. Since construction of the dewatering plant would not occur at the same time as the construction of the power plant units, the dewatering plant construction would not add to an aggregate manpower demand that would cause any cumulative socio-economic effects locally.

According to Joe Simms, Brown and Root's power plant construction engineer, 634 workers were employed as of mid-January 1980. Over half resided in Rapides Parish; the rest resided in other parishes. Mr. Simms reports that there have been no noticeable problems in the local area as a result of the Rodemacher Power Plant construction. Therefore, construction of the dewatering plant (only 110 workers) should cause no problems locally.

Housing. Construction of the fixed-site facilities would have no effect on the local housing market. Construction of the pipeline segments would result in a short-term demand for an estimated 117 transient housing units in the third quarter of 1983, and for 165 units in the third quarter of 1984 (Table 6-3). This demand would not have a significant impact.

Public Services. Construction of the ETSI facilities in this area would have no impact on local public facilities and services.

Operation

Personnel. During operation, the Boyce dewatering plant would employ approximately 12 persons. The pump station would be automated.

Employment and Population: Changes Caused by ETSI. Assuming that all new employees would be nonlocal (a worst-case assumption), some secondary employment (about 12 jobs) also would be generated in the area. However, no socioeconomic problems would arise from the creation of these jobs. Population increases attributable to these jobs (about 58) would be insignificant (Table 5G-5).

Housing. Operation and maintenance of the Boyce dewatering plant would have no impact on the local housing market.

Public Services. There would be no significant change in demand for public services.

Public Finances. The Boyce dewatering plant would add to the tax base in Rapides Parish and would generate increased tax revenues to the parish and its taxing jurisdictions. Likewise, Grant and Avoyelles parishes would receive new tax revenues (Table 5G-6).

Abandonment

Upon abandonment the operation and maintenance position at the site would be eliminated and there would be some short-term "construction" employment during demolition.

Property tax revenues, already reduced due to depreciation of the capital imparovements, would decline further. Assessed value would equal salvage value of the remaining improvements plus the value of the land.

TABLE 5G-5

ESTIMATED EMPLOYMENT AND POPULATION INCREASES DURING OPERATION OF THE BOYCE DEWATERING PLANT

EMPLOYMENT	
Direct Operation and Maintenance Employment	12
Assume 100 percent nonlocal as a worst case	
Secondary Employment	
Nonlocal direct employment (12) x secondary employment multiplier[1] (1.1) = secondary employment	13
Nonlocal Secondary Employment	
Secondary employment (13) x assumed percentage nonlocal[2] (80%) = nonlocal secondary employment (10)	
Total Employment	25
POPULATION	
Nonlocal direct employment (12) x percent single[3] (40%) = nonlocal direct singles	5
Nonlocal direct employment (12) x percent with families (60%) = (7) x average family size[3] (3.7) = nonlocal secondary singles	27
Nonlocal secondary employment (10) x percent single (50%) = nonlocal secondary singles	5
Nonlocal secondary employment (10) x percent with families (50%) x average family size (3.7) = nonlocal secondary with family members	19
Total New Population	56

[1]Secondary employment multiplier adopted from HUD 1976, p. 5.

[2]Mix of locals and nonlocals taking secondary employment adopted from HUD 1976, p. 5.

[3]Percent single, percent with families and family size factors adopted from HUD, 1976, p. 5.

TABLE 5G-6
ESTIMATES OF ETSI PROPERTY TAXES AND COMPARISON WITH EXISTING COUNTY PROPERTY TAXES 1976/77
BOYCE STUDY AREA
ALTERNATIVES: Proposed Action, Market, Barge

	Estimated ETSI Property Tax[1] 1980 Dollars)			County Local Property Tax[2] 1976/77		Evaluation of ETSI (1980 $) Revenues[3]			
Parish	Assessed Valuation of ETSI Components (x $1000)	Tax Factor (percent)	Revenues (x $1000)	Assessed Valuation Subject to Tax (x $1000)	Property Tax Revenues (x $1000)	ETSI Assessed Valuation and Existing Assessed Valuation (x $1000) [1+4]	ETSI Assessed Valuation As a % of Existing Assessed Valuation (x $1000) [1÷4]	Sum ETSI Revenues and 1976/77 Revenues (x $1000) [3+5]	ETSI Revenues As a Percent of 1976/77 Revenues [3÷5]
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Pipeline & Pump Station									
Rapides	43,400	2.05	890	108,133	10,546	151,533	40	11,436	8
Grant	1,200	2.25	27	12,650	1,031	13,850	9	1,858	3
Avoyelles	6,800	1.15	80	23,853	1,290	30,653	29	1,370	6
Dewatering Plant									
Rapides	13,300	2.05	273	108,133	10,546	121,433	123	10,918	3
Total									
Rapides	56,700	2.05	1,163	108,133	10,546	164,833	52	11,709	11
Grant	1,200	2.25	27	12,650	1,031	13,850	9	1,058	3
Avoyelles	6,800	1.15	80	23,853	1,290	30,653	29	1,370	6

[1]ETSI 1980

Assessed Value and property taxes by county were estimated by ETSI by extrapolating previously developed unit cost estimates for components and should in no way be construed as representing the cost estimate for the components. Values shown on this table were derived by ETSI as follows:

Sum of estimated cost of components in county	x	Statewide ratio of assessed value to market value	=	Assessed valuation of ETSI Components	x	Property tax rate (percent) assumed for county	=	Estimated ETSI property taxes (in 1980 $)

[2]US Bureau of the Census, Census of Governments.

[3]Column 6 is the sum of estimated ETSI Assessed Valuation (AV) as of 1980 and the 1976/77 total county assessed valuation (i.e., column 6 = column 1 + column 4).

Column 7 is the ratio of the ETSI AV to the 1976/77 total county AV expressed as a percent (i.e., column 7 = column 1 divided by column 4).

Column 8 is the sum of the estimated ETSI property tax revenues and the 1976/77 total county property tax revenues (i.e., column 8 = column 3 plus column 5).

Column 9 is the ratio of the estimated ETSI revenues to the 1976/77 total county property tax revenues expressed as a percent (i.e., column 9 = column 3 divided by column 5).

CUMULATIVE IMPACTS

The construction and operation activities will not contribute significantly to any cumulative social or economic effects in the area.

SOCIOECONOMIC IMPACT SUMMARY AREA 14: BOYCE

BASELINE CONDITIONS

Boyce dewatering plant and pump station site located in Alexandria, Louisiana area. Pipeline to cross three parishes: Rapides, Grant, and Avoyelles. Population of Alexandria: 49,000. Total population for three-parish area: 173,589. Rodemacher power plant being constructed at Boyce site in 1979-1980, with 634 workers employed in January 1980.

PROJECT COMPONENTS AND ACTIVITIES

Project components in Grant, Rapides, and Avoyelles parishes:

- Boyce dewatering plant (1.8 MMTA) and pump station construction 1983-1984; peak work force of 160 in first quarter 1984
- Coal slurry pipeline construction through three-parish area in the fourth quarter of 1983, with peak of 195 nonlocal workers, and in third quarter of 1984 with an estimated 275 nonlocal workers
- Operation work force of 12 starting in 1984

SOCIAL AND ECONOMIC EFFECTS

(Changes in local conditions due to ETSI, and significance)

Construction

Fixed-site construction work force expected to be entirely local. In-migration of 254 and 358 nonlocal persons resulting from mobile pipeline construction work force would have an insignificant effect on the area's population, housing, and social services.

Operation

Creation of 12 direct jobs. Estimated generation of 13 secondary jobs. Estimated areawide population increase of 58 persons. No significant impacts expected on population, housing, or social services.

Abandonment

Loss of direct and secondary employment; reduction of property tax revenues.

CUMULATIVE EFFECTS

No significant cumulative effects.

BOYCE/ALEXANDRIA STUDY AREA IMPACT SUMMARY

Alternative: Market

Social/Economic Indicator	Baseline Conditions	Construction Impacts	Operation Impacts
Employment	Construction workers in Alexandria area: 3,250 (1978)	Fixed-site: Local 160 (5% of Alexandria area); Nonlocal 0 Mobile pipeliners: Local 275 (8% of area); Nonlocal 275	Direct: 12 jobs Secondary: 13 jobs
Population	Rapides 121,088 Grant 14,330 Avoyelles 38,171 173,589 (1975)	Fixed-site: Local Not Significant; Nonlocal 0 Mobile (Temporary) 358 Not Significant	58 Persons Not Significant
Housing	1,725 motel units available for Mobile pipeline construction	Fixed-site 0 Mobile pipeliners 165 units	Not Significant
Public Services	Not Significant	Not Significant	Not Significant

Property Tax Base and Revenues	1976/1977 Assessed Valuation (x $1000)	Property Tax Revenues (x $1000)	ETSI Minimum Tax Revenues (x $1000) 1980	ETSI Revenues as Percent of 1976/77 Revenues
Rapides	108,133	10,546	1,163	11
Grant	12,650	1,031	27	3
Avoyelles	23,853	1,290	80	6

5.H LAKE CHARLES: AREA 15

The Lake Charles lateral and dewatering plant would be constructed under the proposed action and the market alternative.

LOCAL STUDY AREA

The site of the proposed Lake Charles dewatering plant is about five miles northwest of Lake Charles, Louisiana, in Calcasieu Parish (Figure 5-8). The 14-inch-O.D. Lake Charles lateral from Alexandria Junction passes through Evangeline, Allen, and Jefferson Davis parishes on the way to the Lake Charles site. The Lake Charles study area, therefore, includes these three parishes.

BASELINE CONDITIONS

Population and Employment

The 1975 population of Lake Charles was 76,087. The total population in the four-parish area was 234,305 in 1975 (Table 5H-1).

In December 1979, the Lake Charles labor market area (Calcasieu Parish only) had a labor force of 67,150, of which 62,550 were employed. There were 4600 reported unemployed, making an unemployment rate of 6.8 percent. (Louisiana Department of Labor 1980)

The annual average number of construction workers in 1978 was 5400. This was about 9 percent of the total number employed (60,500), which is 1 percentage point higher than the statewide percentage employed in construction (Table 5H-2).

Housing

All dewatering plant construction workers are expected to come from the local construction labor pool (more than 5400). Therefore, data on permanent housing are not presented here.

Lake Charles has more than 1100 hotel and motel rooms (Lake Charles Chamber of Commerce 1980).

Public Services

Since the Lake Charles dewatering plant would have no impact on public services or facilities in the project area, no data are presented here.

PROJECT COMPONENTS

The project components in Evangeline, Allen, Jefferson Davis, and Calcasieu parishes are:

- Main slurry pipeline: 14-inch O.D. (Alexandria Junction to Lake Charles)
- Pump station PM-19 (PM-1360.0) in Allen Parish
- Lake Charles dewatering plant (4.0 MMTA) (PM-1404.0)

ETSI IMPACT ON LAKE CHARLES STUDY AREA

Construction

Impact calculation procedures are explained in the introduction to this chapter.

Schedule and Personnel. The construction manpower demand for the project components in the area would be generated by the dewatering plant, the pump station, and the coal slurry pipeline.

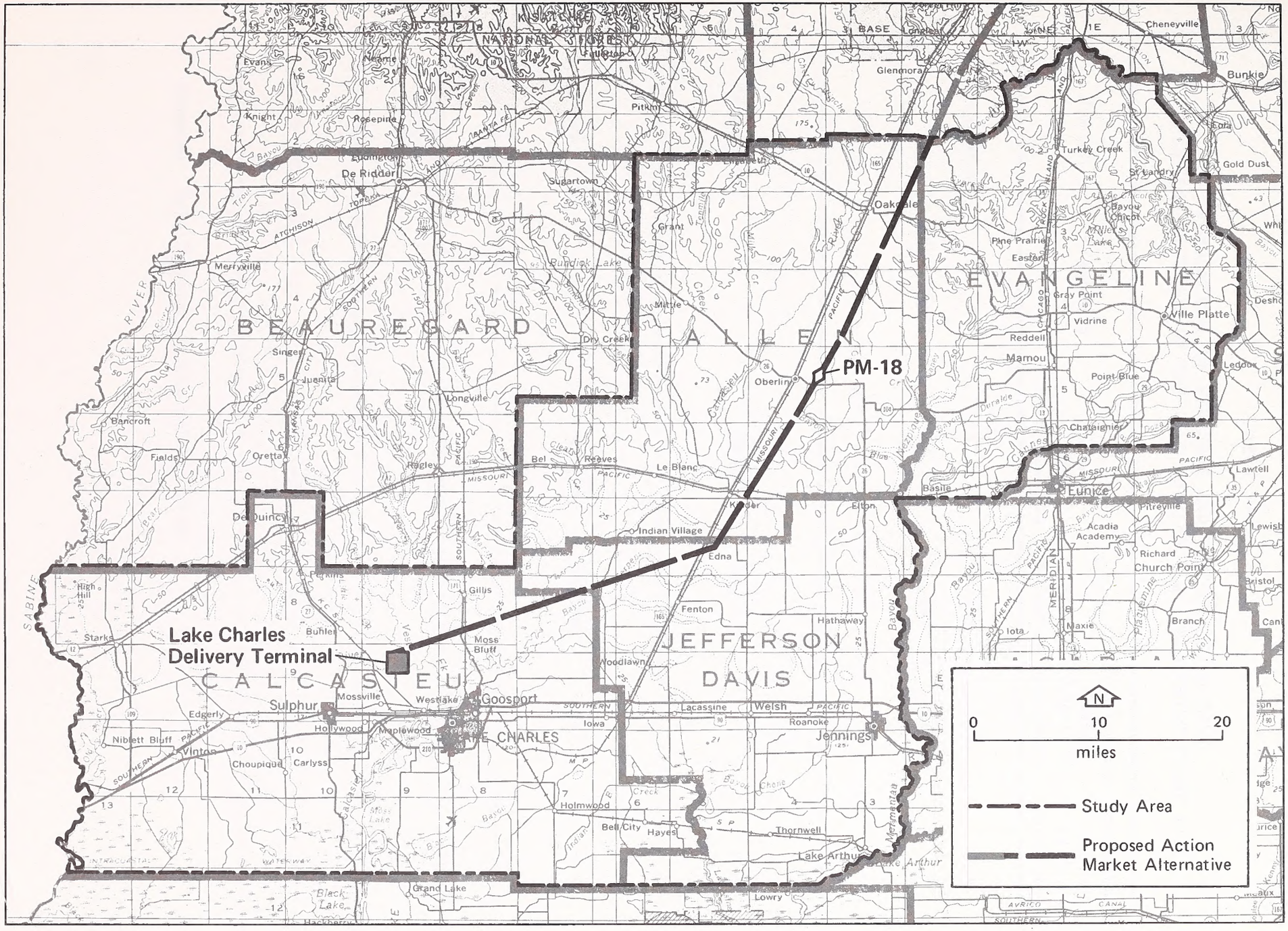

Figure 5-8. LAKE CHARLES LOCAL STUDY AREA

TABLE 5H-1

POPULATIONS OF PARISHES AND COMMUNITIES WITHIN
COMMUTING DISTANCE OF THE LAKE CHARLES, LA, DEWATERING PLANT SITE

Parish	Community	Census 1970 Population	1975 Population	Population Change 1970-1975 (percent)	Approximate Distance From The Site (miles)
Calcasieu		145,415	151,334	3.5	N.A.
	Lake Charles	77,998	76,087	-2.5	5
Evangeline		31,932	32,365	.6	N.A.
Allen		20,794	20,356	-2.1	N.A.
Jefferson Davis		29,554	30,250	1.0	N.A.
4 Parish Total		227,695	234,305	2.8	N.A.

Source: U.S. Bureau of the Census 1978.

TABLE 5H-2

CONSTRUCTION EMPLOYMENT IN THE
LAKE CHARLES AREA
(1978)

	Number of Persons	%
Construction Employment	5,400	9
All Other Employment	54,600	91
Total	60,500	

Source: Louisiana Department of Labor 1980.

The Lake Charles dewatering plant would be constructed in two units of 2.0 MMTA capacity each, which are scheduled for completion in the fourth quarters of 1984 and 1985, respectively (Table 5H-3). The manpower peak would be approximately 189 in the first quarter of 1984.

Gulf States Utilities is constructing two 540-megawatt, coal-fired plants at the Lake Charles site (Roy Nelson Units #5 and #6). Roy Nelson #6, scheduled for commercial operation in 1982, currently is under construction. The 1410 manpower peak is expected the last two quarters of 1980. The contracts for Roy Nelson #5 have not yet been let, but its peak of an estimated 1100 construction workers probably will occur in the first two quarters of 1982. It is unlikely that the power plant units would be under construction at the same time as the dewatering plant units.

Pipeline spread VI would construct the Lake Charles lateral in the study area in the fourth quarter of 1983. Total pipeline work force is estimated to be 260.

Employment and Population: Changes Caused by ETSI. All or most of the fixed-site construction workers (185 at peak) are expected to come from the local construction labor market (5400 in 1978); thus no in-migration of nonlocal construction workers would occur. No significant secondary employment would be generated, nor would any significant population changes occur during dewatering plant construction (Table 5H-4).

TABLE 5H-3

CONSTRUCTION MANPOWER DEMAND:
LAKE CHARLES AREA
(2.0 MMTA in 1984, 4.0 MMTA in 1985)

	Year/Quarter											
	1983				1984				1985			
	1	2	3	4	1	2	3	4	1	2	3	4
Dewatering Plant												
Unit #1[1]	7	46	88	140	156	132	93	43				
Unit #2[2]						20	45	65	70	60	40	
Pump Station (PM-18)		17	42	42	33	33	32	27				
Fixed-Site Subtotal	7	63	130	182	189	185	170	135	70	60	40	
Pipeline Spread VI				260								

[1]Assumes 70 percent of work force for typical 5 MMTA plant committed in first phase, since all plant layout and concrete work done in first phase.

[2]Assumes 30 percent of work force for typical 5 MMTA plant committed in second phase.

TABLE 5H-4

ESTIMATED EMPLOYMENT AND POPULATION INCREASES DURING CONSTRUCTION OF LAKE CHARLES DEWATERING PLANT

EMPLOYMENT	
Direct Employment	
Peak Construction Work Force x assumed percentage nonlocal[1] (0) = nonlocal direct construction employment (0)	185
Secondary Employment	
Nonlocal direct construction employment (0) x secondary employment multiplier[2] (.6) = secondary employment (0)	0
Secondary employment (0) x Assumed percent nonlocal[1] (0)	
Total Employment	185
POPULATION	
Nonlocal direct construction employment (0) x percent single (40%)[2] = nonlocal direct singles	0
Nonlocal direct construction employment (0) x percent with families (60%)[2] = (0) x average family size (3.7)[2] = nonlocal direct with family members	0
Nonlocal secondary employment (0) x percent single (50%)[2] = nonlocal secondary singles	0
Nonlocal secondary employment (0) x percent with families (50%)[2] = (0) x average family size (3.7)[2] = nonlocal secondary with family members	0
Total New Nonlocal Population	0

[1] Assumptions based on review of labor force availability and experience with other construction projects.

[2] Adapted from HUD 1976, p. 5.

The main slurry pipeline construction work force of 260 for the area is expected to include 130 local workers. An additional 130 workers would in-migrate temporarily to the Lake Charles area in late 1983-early 1984. The nonlocal transient population would be about 169 persons in an immediate area of over 79,000 and in a three-parish area of over 234,000 (Table 6-3).

Housing. Construction of the Lake Charles dewatering plant would have no impact on the local housing market.

Half the 260-worker pipeline construction spread is expected to be from the local area. With the inventory of 1100 hotel and motel rooms in Lake Charles, the estimated 130 nonlocal pipelayers should have no problems finding short-term accommodations for the two to four months they would be in the area.

Public Services. Construction of the Lake Charles dewatering plant and the pipeline would have no impact on local public facilities and services.

OPERATION

Personnel. During operation, the Lake Charles dewatering plant would employ about 28 workers.

Employment and Population: Changes Caused by ETSI. Assuming that all real direct employment were taken by nonlocals (a worst-case assumption), some secondary employment (about 31 jobs) would be generated in the area, as shown in Table 5H-5. These increases, however, would be insignificant.

TABLE 5H-5

ESTIMATED EMPLOYMENT AND POPULATION INCREASES DURING OPERATION OF THE LAKE CHARLES DEWATERING PLANT

EMPLOYMENT	
Direct Operation and Maintenance Employment	28
Assume 100 percent nonlocal as a worst case	
Secondary Employment	
Nonlocal direct employment (28) x secondary employment multiplier[1] (1.1) = secondary employment	31
Nonlocal Secondary Employment	
Secondary employment (31) x assumed percentage nonlocal[2] (80%) = nonlocal secondary employment (25)	
Total Employment	59
POPULATION	
Nonlocal direct employment (28) x percent single[3] (40%) = nonlocal direct singles	11
Nonlocal direct employment (28) x percent with families (60%) = (17) x average family size[3] (3.7) = nonlocal secondary singles	62
Nonlocal secondary employment (25) x percent single (50%) = nonlocal secondary singles	13
Nonlocal secondary employment (25) x percent with families (50%) x average family size (3.7) = nonlocal secondary with family members	46
Total New Population	132

[1]Secondary employment multiplier adopted from HUD 1976, p. 5.

[2]Mix of locals and nonlocals taking secondary employment adopted from HUD 1976, p. 5.

[3]Percent single, percent with families and family size factors adopted from HUD, 1976, p. 5.

Population increases attributable to the dewatering plant operation (some 133 persons) would be insignificant.

Housing. Operation of the Lake Charles dewatering plant would have no impact on the local housing market.

Public Services. No adverse effects on public services would occur. The Lake Charles dewatering plant would add to the tax base in Calcasieu Parish and would generate some increased property tax revenues to the parish and its taxing jurisdictions, as estimated in Table 5H-6.

Abandonment

Upon abandonment, the operation and maintenance positions at the site would be eliminated. There would be some short-term "construction" employment during demolition.

Property tax revenues, already reduced by depreciation of the capital improvements, would decline further. Assessed value would equal salvage value of the remaining improvements plus the value of the land.

CUMULATIVE EFFECTS

The construction and operation activities would not contribute significantly to any cumulative social or economic effects in the area.

TABLE 5H-6
ESTIMATES OF ETSI PROPERTY TAXES AND COMPARISON WITH EXISTING COUNTY PROPERTY TAXES
LAKE CHARLES STUDY AREA
ALTERNATIVES: Proposed Action, Market, Barge

	Estimated ETSI Property Tax[1] (1980 Dollars)			County Local Property Tax[2] 1976/77		Evaluation of ETSI (1980 $) Revenues[3]			
	Assessed Valuation of ETSI Components (x $1000)	Tax Factor (percent)	Revenues (x $1000)	Assessed Valuation Subject to Tax (x $1000)	Property Tax Revenues (x $1000)	ETSI Assessed Valuation and Existing Assessed Valuation (x $1000) [1+4]	ETSI Assessed Valuation As a % of Existing Assessed Valuation [1÷4]	Sum ETSI Revenues and 1976/77 Revenues (x $1000) [3+5]	ETSI Revenues As a Percent of 1976/77 Revenues [3÷5]
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Pipeline & Pump Stations									
Evangeline	500	0.88	4	36,150	1,753	36,650	2	1,757	0.2
Allen	15,700	1.79	280	20,881	1,728	36,581	75	2,008	16
Jefferson Davis	3,000	1.18	20	53,808	2,810	55,808	4	2,830	0.7
Calcasieu	3,300	1.90	63	293,458	22,772	296,848	1	22,835	0.3
Dewatering Plant									
Calcasieu	22,600	1.90	429	293,548	22,772	316,148	8	23,201	2
Total									
Evangeline	500	0.88	4	36,150	1,753	36,650	2	1,757	0.2
Allen	15,700	1.79	280	20,881	1,728	36,581	75	2,008	16
Jefferson Davis	2,000	1.18	20	53,808	2,810	5,898	4	2,830	0.7
Calcasieu	25,900	1.90	492	293,548	22,772	319,448	9	23,264	2

[1]ETSI 1980. Assessed value and property taxes were estimated by ETSI by county for the EIS by extrapolating previously developed unit cost estimates for components and should in no way be construed as representing the cost estimate for the components. Values shown on this table were derived by ETSI as follows:

Sum of estimated cost of components in county	x	Statewide ratio of assessed value to market value	=	Assessed valuation of ETSI Components	x	Property tax rate (percent) assumed for county	=	Estimated ETSI property taxes (in 1980 $)

[2]US Bureau of the Census, Census of Governments.

[3]Column 6 is the sum of estimated ETSI Assessed Valuation (AV) as of 1980 and the 1976/77 total county assessed valuation (i.e., column 6 = column 1 + column 4).

Column 7 is the ratio of the ETSI AV to the 1976/77 total county AV expressed as a percent (i.e., column 7 = column 1 divided by column 4).

Column 8 is the sum of the estimated ETSI property tax revenues and the 1976/77 total county property tax revenues (i.e., column 8 = column 3 plus column 5).

Column 9 is the ratio of the estimated ETSI revenues to the 1976/77 total county property tax revenues expressed as a percent (i.e., column 9 = column 3 divided by column 5).

SOCIOECONOMIC IMPACT SUMMARY AREA 15: LAKE CHARLES, LA.

BASELINE CONDITIONS

Lake Charles dewatering plant and pump station is within five miles of Lake Charles, Louisiana (population of 76,000 in 1975). There are about 5400 construction workers in Lake Charles. Two power plant units, Roy Nelson #5 and #6, currently are under construction or planned for construction at Lake Charles site. Peak of 1410 workers is expected in last quarters of 1980.

PROJECT COMPONENTS AND ACTIVITIES

- Lake Charles dewatering plant (4 MMTA) and pump station construction in 1983-1985; peak work force of 189 in first quarter of 1984.
- Main slurry pipeline through Evangeline, Allen, Jefferson Davis, and Calcasieu parishes; work force of 260 in fourth quarter of 1983.

SOCIAL AND ECONOMIC EFFECTS

(Changes in local conditions due to ETSI, and significance)

Construction

Fixed-site construction work force expected to be entirely local. In-migration of 169 nonlocal pipeline construction workers and families for one quarter will have an insignificant effect on the area's population, housing, and social services.

Operation

Creation of 28 direct jobs. Estimated generation of 31 secondary jobs. Estimated population increase of 133 persons, less than 0.05 percent of four-parish area population. Therefore, no significant impacts on population, housing, or social services.

Abandonment

Loss of direct and secondary employment; reduction of property tax revenues.

CUMULATIVE EFFECTS

No significant cumulative effects.

LAKE CHARLES, LA. STUDY AREA IMPACT SUMMARY

Impact Summary Affected Area Lake Charles, LA. Alternative: Proposed Action & Market

Social/Economic Indicator	Baseline Conditions	Construction Impacts	Operation Impacts
Employment	5400 (1978) in Lake Charles area	Fixed-site Local 189 3.5% Nonlocal 0 - Pipeline Local 130 2.4% Nonlocal 130 2.4%	Direct: 12 jobs Secondary: 13 jobs
Population	Calcasieu 151,334 Evangeline 32,365 Allen 20,356 Jefferson Davis 36,423 Total 4-Parish Area 234,305 (1975) Lake Charles pop. 76,087 (1975)	Fixed-site Local Not Significant Nonlocal 0 Pipeline 169 persons Temporary	133 persons 0.2% of Lake Charles population
Housing	over 1000 motel and hotel rooms at Lake Charles (5 miles from site) (1980)	Fixed-site 0 Mobile pipeline 99 units or 9% of Lake Charles' units Construction Workers	Not Significant
Public Services	Not Significant	Not Significant	Not Significant

Property Tax Base and Revenues	1976/1977 Assessed Valuation (x $1000)	Property Tax Revenue (x $1000)	ETSI Minimum Tax Revenues (x $1000) 1980	ETSI Revenues as Percent of 1976/77 Revenues
Calcasieu	293,548	22,772	492	2.0
Evangeline	36,150	1,753	4	0.2
Allen	20,881	1,728	280	16.0
Jefferson Davis	53,808	2,810	20	0.7

5.I NEW ROADS: AREA 16

LOCAL STUDY AREA

The site of the proposed New Roads dewatering plant, maintenance base, and pump station is approximately 5 miles from the community of New Roads, Louisiana (which is in Pointe Coupee Parish), and about 30 miles from Baton Rouge (Figure 5-9 and Maps A-32 and A-33). The pipeline system would be located in St. Landry, Pointe Coupee, and West Baton Rouge parishes. The local study area includes all the parishes in the Baton Rouge SMSA (West Baton Rouge, East Baton Rouge, Livingston, and Ascension parishes).

BASELINE CONDITIONS

Population and Employment

The 1975 population of New Roads was 4145, up from 3945 in 1970. Baton Rouge had an estimated population of 332,300 in 1978 (Table 5I-1).

The construction of Big Cajun Power Plant Units #1 and #2 in this area involved a peak work force of 1500 in 1979. Most of the workers came from Baton Rouge.

The Baton Rouge Area has a large construction labor pool (Table 5I-2). In 1978 the Baton Rouge labor market had an average of 24,675 persons employed in construction (Louisiana Department of Labor 1980).

Housing

Virtually no vacant housing was available in the community of New Roads during construction of Big Cajun Power Plant Units #1 and #2. Construction workers who moved into the area to work on the power plant were able to find housing in Baton Rouge only (Cromwell

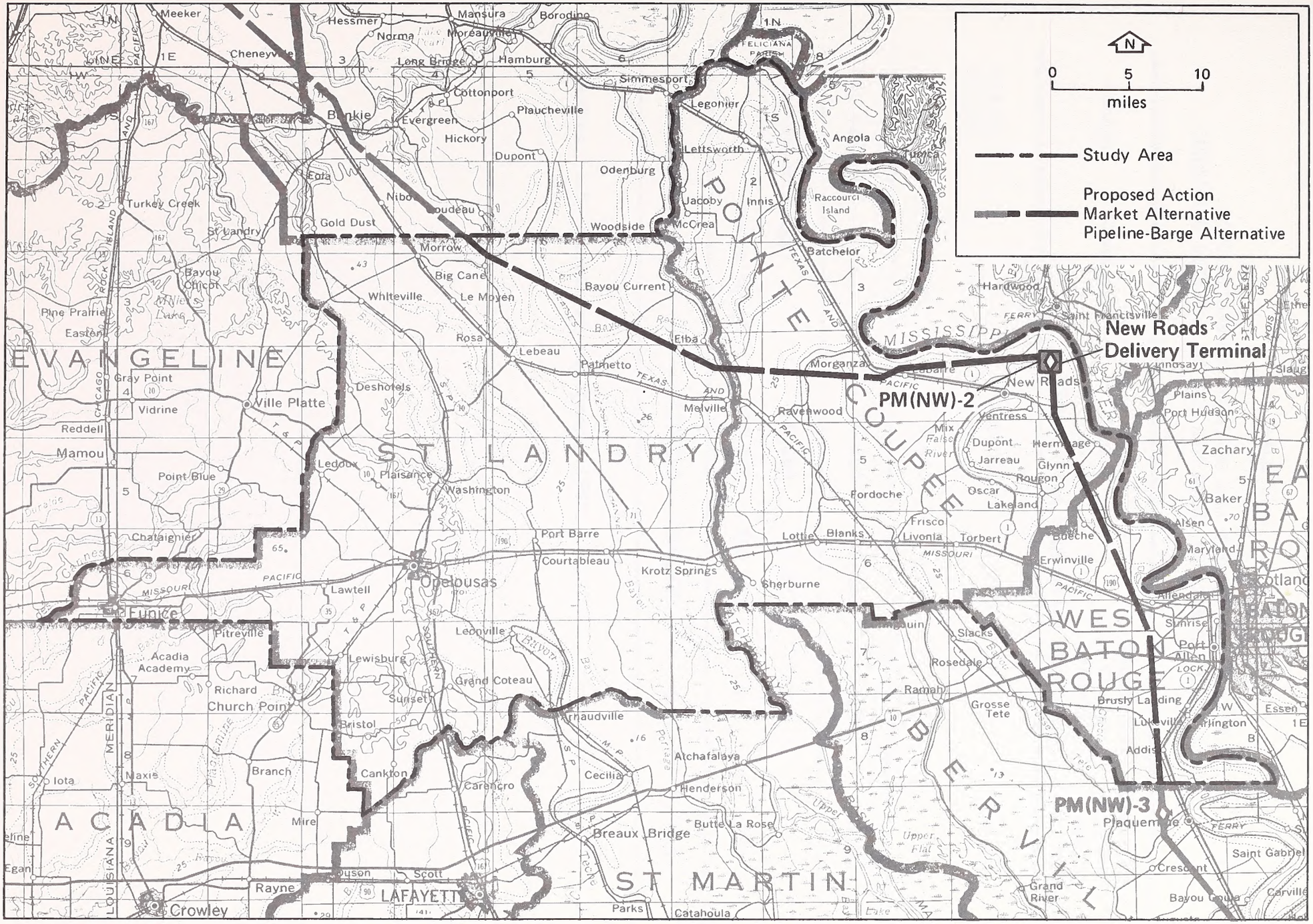

Figure 5-9. NEW ROADS LOCAL STUDY AREA

TABLE 5I-1

POPULATIONS OF COUNTIES AND COMMUNITIES WITHIN
COMMUTING DISTANCE OF THE NEW ROADS DEWATERING PLANT SITE

Parish	Community	Census 1970 Population	1975 Population	Population Change 1970-1975 (percent)	Approximate Distance from the Site (miles)
Pointe Coupee		22,002	21,855	- 2.0	N.A.
	New Roads	3,945	4,145	5.1	5
St. Landry		80,364	80,553	1.2	N.A.
West Baton Rouge		16,846	17,522	3.7	
	Baton Rouge	285,167	310,922	9.0	30
Total 3 parishes		119,212	119,930	<.01	N.A.

Source: U.S. Bureau of the Census 1980.

TABLE 5I-2

CONSTRUCTION EMPLOYMENT IN BATON ROUGE AREA
(Within Commuting Distance of New Roads)

	Number of Persons	%
Construction Employment	24,675	12%
Employment	177,400	88%
	202,075	

1980). For the proposed New Roads dewatering plant and other facilities, construction workers would come from Baton Rouge. Since the housing market in Baton Rouge is so large in comparison with the potential additional housing demand that might arise because of the construction of the dewatering plant, no data are presented on the "permanent" housing market. Baton Rouge has 3500 hotel and motel rooms (Baton Rouge Chamber of Commerce 1980).

Public Services

Since the New Roads dewatering plant would have no significant effect on public services or facilities, no data are presented here.

PROJECT COMPONENTS

Under the proposed action, project components in St. Landry, Pointe Coupee, and West Baton Rouge parishes include:

- Main slurry pipeline (26-inch and 16-inch O.D.)
- New Roads dewatering plant
- New Roads pump station
- New Roads maintenance base

ETSI PROJECT IMPACT ON NEW ROADS STUDY AREA - PROPOSED ACTION

Construction

Schedule and Personnel. The dewatering plant and pump station at New Roads would require approximately 150 construction workers. Construction would follow completion and commercial startup of Big Cajun Unit #3, which is expected to be on line by January 1, 1983 (Table 5I-3). Big Cajun Units #1 and #2 had a peak work force of

TABLE 5I - 3

CONSTRUCTION MANPOWER DEMAND:
NEW ROADS AREA

Manpower	Year/Quarter											
	1982				1983				1984			
	1	2	3	4	1	2	3	4	1	2	3	4
Dewatering Plant (2,0 MMTA)					5	32	62	100	111	94	66	30
Main-Line Pump Station						20	49	49	39	39	38	30
Total ETSI Fixed-Site Components					5	52	111	149	150	133	104	60
Main Slurry Pipeline Spread VI										390		
Cajun Electric Company Big Cajun #3[1] (peak of 1100)					*Scheduled to go on line January 1, 1983							

[1] Rick Cromwell, Cajun Electric Co., 1980.

1500; in February 1980 the peak was at 1300. Unit #3 would have a peak work force of 1100. Pipeline construction would take place in the second quarter of 1983. The 26-inch O.D. main slurry pipeline to New Roads is anticipated to require a spread crew of 390. The 16-inch Wilton Extension is expected to require a crew of 260.

Employment and Population: Changes Caused by ETSI. All the dewatering plant and pump station construction labor (peak of 150) would come from the Baton Rouge construction labor pool (about 24,700 in 1978). Little or no secondary employment would be created, and no population changes are expected as a result of the dewatering plant and pump station construction (Table 5I-4).

Pipeline construction would create a short-term (two- to four-month) influx of about 195 mobile pipeline construction workers. The transient nonlocal population would be 254 (Table 6-3).

Housing. Construction of the New Roads dewatering plant and pump station would have no significant effect on local housing market conditions.

Mobile pipeliners would require an estimated 115 transient housing units. Since Baton Rouge has 3500 hotel and motel rooms, it should satisfy this demand.

Public Services. Construction of the New Roads dewatering plant would have no significant effect on local public facilities and services.

TABLE 5I-4

ESTIMATED EMPLOYMENT AND POPULATION INCREASES DURING CONSTRUCTION OF NEW ROADS DEWATERING PLANT

EMPLOYMENT	
Direct Employment	
Peak Construction Work Force x assumed percentage nonlocal[1] (0) = nonlocal direct construction employment (0)	150
Secondary Employment	
Nonlocal direct construction employment (0) x secondary employment multiplier[2] (.6) = secondary employment (0)	0
Secondary employment (0) x Assumed percent nonlocal[1] (0)	
Total Employment	150
POPULATION	
Nonlocal direct construction employment (0) x percent single (40%)[2] = nonlocal direct singles	0
Nonlocal direct construction employment (0) x percent with families (60%)[2] = (0) x average family size (3.7)[2] = nonlocal direct with family members	0
Nonlocal secondary employment (0) x percent single (50%)[2] = nonlocal secondary singles	0
Nonlocal secondary employment (0) x percent with families (50%)[2] = (0) x average family size (3.7)[2] = nonlocal secondary with family members	0
Total New Nonlocal Population	0

[1] Assumptions based on review of labor force availability and experience with other construction projects.

[2] Adapted from HUD 1976, p. 5.

Operation

Personnel. The New Roads site would house not only the 2.0 MMTA dewatering plant, but also the ETSI southern district maintenance base. The dewatering plant would employ about 13 workers, and the maintenance base and pipeline base would employ another 80--making a total of about 93 direct employees.

Employment and Population: Changes Caused by ETSI. Assuming that all the new direct employment would be taken by nonlocals (a worst-case assumption), and assuming a secondary employment multiplier of 1.1, an additional 102 secondary jobs would be generated.

These secondary service jobs would be distributed throughout the Baton Rouge SMSA, and through small communities such as New Roads. Since the population increase throughout the area is estimated to be approximately only 436, this increase would not be significant (Table 5I-5).

Housing. The new permanent jobs would stimulate additional demand for housing locally, as some of the new permanent employees would seek homes in New Roads rather than 30 miles away in Baton Rouge. Since the total number of new employees would be less than 100, the effect on the housing market in New Roads and Baton Rouge would be minor or negligible.

Public Services. New permanent employees and their families seeking housing locally in New Roads would increase demand for public services in New Roads; however, the effects would be minor.

TABLE 5I-5

ESTIMATED EMPLOYMENT AND POPULATION INCREASES DURING OPERATION OF THE INDEPENDENCE DEWATERING PLANT

EMPLOYMENT	
Direct Operation and Maintenance Employment	93
Assume 100 percent nonlocal as a worst case	
Secondary Employment	
Nonlocal direct employment (93) x secondary employment multiplier[1] (1.1) = secondary employment	102
Nonlocal Secondary Employment	
Secondary employment (102) x assumed percentage nonlocal[2] (80%) = nonlocal secondary employment (82)	
Total Employment	195
POPULATION	
Nonlocal direct employment (93) x percent single[3] (40%) = nonlocal direct singles	37
Nonlocal direct employment (93) x percent with families (60%) = (56) x average family size[3] (3.7) = nonlocal secondary singles	206
Nonlocal secondary employment (82) x percent single (50%) = nonlocal secondary singles	41
Nonlocal secondary employment (82) x percent with families (50%) x average family size (3.7) = nonlocal secondary with family members	152
Total New Population	436

[1]Secondary employment multiplier adopted from HUD 1976, p. 5.

[2]Mix of locals and nonlocals taking secondary employment adopted from HUD 1976, p. 5.

[3]Percent single, percent with families and family size factors adopted from HUD, 1976, p. 5.

Property Tax Revenues. The dewatering plant and associated facilities would increase the tax base in Pointe Coupee Parish and would contribute new revenues to the parish and its taxing jurisdictions. Estimates of added assessed value and tax revenues are shown in Table 5I-6.

Abandonment

Upon abandonment, the operation and maintenance positions at the site would be eliminated. There would be some short-term "construction" employment during demolition.

Property tax revenues, already reduced by depreciation of the capital improvements, would decline further. Assessed value would equal salvage value of the remaining improvements plus the value of the land.

CUMULATIVE EFFECTS

The construction and operation activities would not contribute significantly to any cumulative social or economic effects in the area.

TABLE 5I-6

ESTIMATES OF ETSI PROPERTY TAXES AND COMPARISON WITH EXISTING COUNTY PROPERTY TAXES
NEW ROADS STUDY AREA
ALTERNATIVES: Proposed Action, Market, Barge

	Estimated ETSI Property[1] Tax (1980 Dollars)			County Local Property[2] Tax 1976/77		Evaluation of ETSI[3] (1980 $) Revenues			
	Assessed Valuation of ETSI Components (x $1000)	Tax Factor (percent)	Revenues (x $1000)	Assessed Valuation Subject to Tax (x $1000)	Property Tax Revenues (x $1000)	ETSI Assessed Valuation plus 1976/77 Assessed Valuation (x $1000) [1+4]	ETSI Assessed Valuation As a % of 1976/77 Assessed Valuation [1÷4]	Sum ETSI Revenues and 1976/77 Revenues (x $1000) [3+5]	ETSI Revenues as a Percent of 1976/77 Revenues [3÷5]
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Pipeline & Pump Stations									
St. Landry	17,000	0.81	140	83,637	3,415	100,637	20	3,555	4
Pointe Coupee	22,300	0.60	134	26,052	665	48,352	86	799	20
West Baton Rouge	7,800	1.63	127	25,459	2,562	33,259	31	2,689	5
Dewatering Plant									
Pointe Coupee	14,400	0.60	86	26,052	665	40,452	55	751	13
Total									
St. Landry	17,000	0.81	140	83,637	3,915	100,437	20	3,555	4
Pointe Coupee	36,700	0.60	220	26,052	665	62,752	140	885	33
West Baton Rouge	7,800	1.63	127	25,459	2,562	33,259	31	2,689	5

[1] ETSI 1980

Assessed value and property taxes were estimated by ETSI by county for the EIS by extrapolating previously developed unit cost estimates for components and should in no way be construed as representing the cost estimate for the components. Values shown on this table were derived by ETSI as follows:

Sum of estimated cost of components in county	x	Statewide ratio of assessed value to market value	=	Assessed valuation of ETSI Components	x	Property tax rate (percent) assumed for county	=	Estimated ETSI Property taxes (in 1980 $)

[2] US Bureau of the Census, 1977 Census of Governments.

[3] Column 6 is the sum of estimated ETSI Assessed Valuation (AV) as of 1980 and the 1976/77 total county assessed valuation (i.e., column 6 = column 1 + column 4).

Column 7 is the ratio of the ETSI AV to the 1976/77 total county AV expressed as a percent (i.e., column 7 = column 1 divided by column 4).

Column 8 is the sum of the estimated ETSI property tax revenues and the 1976/77 total county property tax revenues (i.e., column 8 = column 3 plus column 5).

Column 9 is the ratio of the estimated ETSI revenues to the 1976/77 total county property tax revenues expressed as a percent (i.e., column 9 = column 3 divided by column 5).

SOCIOECONOMIC IMPACT SUMMARY AREA 16: NEW ROADS

BASELINE CONDITIONS

New Roads site is 5 miles from New Roads, Louisiana (population 4145) and 30 miles from Baton Rouge (population 332,300 in 1978). Construction of Big Cajun Power Plant Units #1 and #2 in this area involved a peak work force of 1500 in 1979. Most workers commuted from Baton Rouge.

PROJECT COMPONENTS AND ACTIVITIES

- Main slurry pipeline: 26-inch O.D. to New Roads; spread crew of 390; second quarter of 1983. 16-inch Wilton Extension would require a work force of 260.

- New Roads dewatering plant (2 MMTA), pump station and maintenance base: peak work force of 150 in first quarter 1984. Operation work force of 93 employees starting in 1985.

SOCIAL AND ECONOMIC EFFECTS

(Changes in local conditions due to ETSI, and significance)

Construction

Fixed-site construction work force expected to be entirely local. In-migration of 195 temporary pipeline construction workers and families would have no significant effect on the area's population, housing, and social services.

Operation

Creation of 93 direct jobs and 102 secondary jobs. Estimated area population increase of 436 persons has an insignificant impact on area's population, housing, and social services unless the majority located in New Roads. In such a case, the estimated new population would be 10 percent of present New Roads population.

Abandonment

Loss of direct and secondary employment; reduction of property tax revenues.

CUMULATIVE EFFECTS

No significant cumulative effects.

ETSI II/10

NEW ROADS, LA. STUDY AREA IMPACT SUMMARY

Impact Summary Affected Area New Roads, LA. Alternative: Proposed Action and Market

Social/Economic Indicator	Baseline Conditions		Construction Impacts		Operation Impacts	
Employment	Construction	24,675 (1978) in Baton Rouge Area Labor Force	Fixed-site Local 150 .6% of Nonlocal 0 Mobile Pipeliners .8% Local 195,130 Nonlocal 195,130		Direct: 93 jobs Secondary: 102 jobs	N.S. N.S.
Population	Pointe Coupee St. Landry Baton Rouge Total New Roads	21,855 (1975) 80,553 (1975) 332,300 (1975) 434,708 4,145 (1975)	Fixed-site 0 Mobile Pipeliners 254,169		436 persons	Not Significant
Housing	3,500 hotel and motel rooms available in Baton Rouge		115 temporary units		Not Significant	
Public Services	Not Significant		Not Significant		Not Significant	

Property Tax Base and Revenues	1976/1977 Assessed Valuation (x $1000)	Property Tax Revenue	ETSI Minimum Tax Revenues (x $1000)1980	ETSI Revenues As Percent of 1976/77 Revenues
St. Landry	83,637	3,415	140	4
Pointe Coupee	26,052	665	220	33
West Baton Rouge	25,459	2,562	127	5

5.J BATON ROUGE: AREA 16MA

LOCAL STUDY AREA

The site of the proposed 5.8 MMTA Baton Rouge dewatering plant is in East Baton Rouge Parish (Figure 5-10). The local study area is limited to East and West Baton Rouge parishes. The Baton Rouge dewatering plant would be part of the market alternative only.

BASELINE CONDITIONS

Population and Employment

In 1978 the population of Baton Rouge was 332,300. Other population data are presented in Table 5J-1. The Baton Rouge SMSA (East Baton Rouge, West Baton Rouge, Livingston, and Ascension parishes) had a civilian labor force of 202,075, with 188,950 employed. With 13,125 unemployed, the unemployment rate was 6.5 percent. There were 24,675 workers employed in construction (Table 5J-2).

Since a peak manpower demand of 260 is expected for the Baton Rouge dewatering plant, no in-migration of nonlocal construction workers is expected for this plant.

Housing

No population changes are expected from construction and operation of the Baton Rouge plant. Therefore there would be no impact on housing in the area, and consequently no data are presented.

Public Services

Since no impacts are expected, no data on public services or facilities are presented here.

PROJECT COMPONENTS

The project components in the Baton Rouge area include:

- The Baton Rouge lateral from New Roads
- The Baton Rouge dewatering plant (5.8 MMTA)

ETSI IMPACT ON THE BATON ROUGE AREA

Construction

Impact calculation procedures are explained in the introduction to Chapter 5.

Schedule and Personnel. The 5.8 MMTA capacity dewatering plant would be constructed concurrently with the Exxon Cogeneration Plant (see Table 5J-3). The peak demand for workers for the dewatering plant would be about 259, in the fourth quarter of 1985.

The Baton Rouge lateral would be constructed by spread VI during the main construction period. Thus, construction would take place in the second or third quarter of 1984. Total spread manpower would be 260 workers.

Employment and Population: Changes Caused by ETSI. The demand for construction workers for the dewatering plant (about 259 at peak in 1985) would be met from the local labor pool. Since Baton Rouge has a large construction labor pool (24,675 in 1978), in-migration of nonlocal construction workers is not expected to occur. Consequently, population and employment effects in the area would not be significant (Table 5J-4).

To meet the demand for 260 pipeline construction workers, half the work force (130 workers) is expected to come from the Baton Rouge area; the other half is expected to be nonlocals. The 130 nonlocal workers

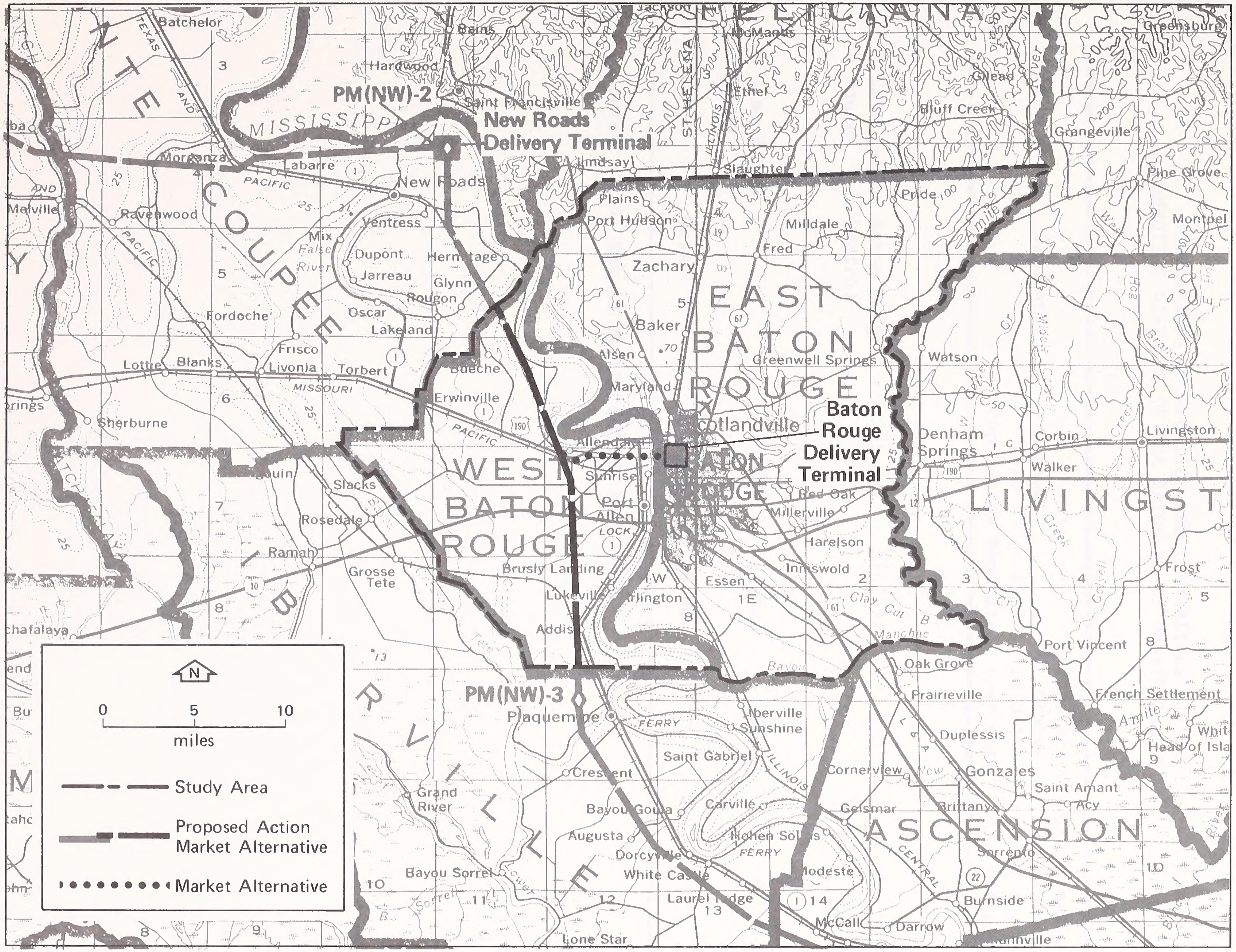

Figure 5-10. BATON ROUGE LOCAL STUDY AREA

TABLE 5J-1

POPULATIONS OF COUNTIES AND COMMUNITIES WITHIN
COMMUTING DISTANCE OF THE BATON ROUGE DEWATERING PLANT

Parish	Community	Census 1970 Population	1975 Population	Population Change 1970-1975 (percent)	Approximate Distance from the Site (miles)
East Baton Rouge	Baton Rouge (Metro)	285,167	310,922	9.0	0
West Baton Rouge		16,864	17,522	3.7	5
	Total	302,031	328,444		

Source: U.S. Bureau of the Census 1978.

TABLE 5J-2

CONSTRUCTION EMPLOYMENT IN THE BATON ROUGE AREA

	Number of Persons	%
Construction	24,675	12.2
Other Employment	177,400	87.8
Total	202,075	

Source: Louisiana Department of Labor, undated.

TABLE 5J - 3
CONSTRUCTION MANPOWER DEMAND: BATON ROUGE AREA

	Year/Quarter															
	1983				1984				1985				1986			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Dewatering Plant								12	75	145	230	259	218	154	71	
Baton Rouge Lateral Pipeline							260									
Exxon[1] Cogeneration			1200				1200			less than 1200			1200		on line 1987	

[1] Estimates from Daryll Hess, Engineer, Exxon Baton Rouge, personal communication 2/14/80.

TABLE 5J-4

ESTIMATED EMPLOYMENT AND POPULATION INCREASES DURING CONSTRUCTION OF BATON ROUGE DEWATERING PLANT

EMPLOYMENT	
Direct Employment	
Peak Construction Work Force x assumed percentage nonlocal[1] (0) = nonlocal direct construction employment (0)	259
Secondary Employment	
Nonlocal direct construction employment (0) x secondary employment multiplier[2] (.6) = secondary employment (0)	0
Secondary employment (0) x Assumed percent nonlocal[1] (0)	
Total Employment	259
POPULATION	
Nonlocal direct construction employment (0) x percent single (40%)[2] = nonlocal direct singles	0
Nonlocal direct construction employment (0) x percent with families (60%)[2] = (0) x average family size (3.7)[2] = nonlocal direct with family members	0
Nonlocal secondary employment (0) x percent single (50%)[2] = nonlocal secondary singles	0
Nonlocal secondary employment (0) x percent with families (50%)[2] = (0) x average family size (3.7)[2] = nonlocal secondary with family members	0
Total New Nonlocal Population	0

[1] Assumptions based on review of labor force availability and experience with other construction projects.

[2] Adapted from HUD 1976, p. 5.

would likely cause a temporary area population increase of 169, which is insignificant in an area of over 332,300 (Table 5J-5).

Housing. The construction of the Baton Rouge dewatering plant would have no effect on housing market conditions.

Assuming that half of the 260 pipeliners constructing the Baton Rouge lateral would be nonlocal, approximately 130 pipeliners and their families would require about 80 temporary housing units in the Baton Rouge area. Since Baton Rouge has 3500 hotel and motel rooms, the demand for temporary housing would be insignificant (Table 6-3).

Public Services. The construction of the Baton Rouge lateral and the Baton Rouge dewatering plant would have no significant effect on public services.

Operation

Personnel. During operation, the Baton Rouge dewatering plant would employ about 40 persons (Table 5J-5).

Employment and Population: Changes Caused by ETSI. Assuming that all the new positions at the dewatering plant would be filled by nonlocals who moved into the area (a "worst-case" assumption), an additional 44 new secondary jobs would be generated. The total population increase in the Baton Rouge SMSA (again using a "worst-case" assumption) would be approximately 189 (Table 5J-5).

Housing. There would be no significant effect on local housing market conditions.

Public Services. No significant increased demand for public facilities and services would occur.

TABLE 5J-5

ESTIMATED EMPLOYMENT AND POPULATION INCREASES DURING OPERATION OF THE BATON ROUGE DEWATERING PLANT

EMPLOYMENT	
Direct Operation and Maintenance Employment	40
Assume 100 percent nonlocal as a worst case	
Secondary Employment	
Nonlocal direct employment (40) x secondary employment multiplier[1] (1.1) = secondary employment	44
Nonlocal Secondary Employment	
Secondary employment (44) x assumed percentage nonlocal[2] (80%) = nonlocal secondary employment (35)	
Total Employment	84
POPULATION	
Nonlocal direct employment (40) x percent single[3] (40%) = nonlocal direct singles	16
Nonlocal direct employment (40) x percent with families (60%) = (24) x average family size[3] (3.7) = nonlocal secondary singles	89
Nonlocal secondary employment (35) x percent single (50%) = nonlocal secondary singles	18
Nonlocal secondary employment (35) x percent with families (50%) x average family size (3.7) = nonlocal secondary with family members	65
Total New Population	188

[1]Secondary employment multiplier adopted from HUD 1976, p. 5.

[2]Mix of locals and nonlocals taking secondary employment adopted from HUD 1976, p. 5.

[3]Percent single, percent with families and family size factors adopted from HUD, 1976, p. 5.

Property Tax Revenues. The dewatering plant and associated facilities would increase the tax base in East Baton Rouge Parish and contribute new revenues to the parish and its taxing jurisdictions. Estimates of added assessed value and tax revenues are shown in Table 5J-6.

Abandonment

Upon abandonment, the operation and maintenance positions at the site would be eliminated. There would be some short-term "construction" employment during demolition.

Property tax revenues, already reduced by depreciation of the capital improvements, would decline further. Assessed value would equal salvage value of the remaining improvements plus the value of the land.

CUMULATIVE EFFECTS

The construction and operation activities would not contribute significantly to any cumulative social or economic effects in the area.

TABLE 5J-6

ESTIMATES OF ETSI PROPERTY TAXES AND COMPARISON WITH COUNTY PROPERTY TAXES 1976/1977
BATON ROUGE STUDY AREA (Market and Barge Alternatives)

	Estimated ETSI Property[1] Tax (1980 Dollars)			County Local Property[2] Tax 1976/77		Evaluation of ETSI[3] Revenues (1980 dollars)			
	Assessed Valuation of ETSI Components (x $1000)	Tax Factor (percent)	Revenues (x $1000)	Assessed Valuation Subject to Tax (x $1000)	Property Tax Revenues (x $1000)	ETSI Assessed Valuation plus 1976/77 Assessed Valuation (x $1000)	ETSI Assessed Valuation as a % of 1976/77 Assessed Valuation	Sum ETSI Revenues and 1976/77 Revenues (x $1000)	ETSI Revenues as a Percent of 1976/77 Revenues
Pipeline (& Pump Stations)	(1)	(2)	(3)	(4)	(5)	[1+4] (6)	[1÷4] (7)	[3+5] (8)	[3÷5] (9)
East Baton Rouge	100	1.38	1	711,942	36,694	712,042	0.014	36,695	0.001
West Baton Rouge	7,800	1.63	127	25,459	2,562	33,259	31	2,689	5
Dewatering Plant									
East Baton Rouge	26,700	1.38	368	711,942	36,694	738,642	4	37,062	1
Total									
East Baton Rouge	26,800	1.38	369	711,942	36,694	738,742	4	37,063	1
West Baton Rouge	7,800	1.63	127	25,459	2,562	33,259	31	2,689	5

[1]ETSI 1980

Assessed Value and property taxes by county were estimated by ETSI by extrapolating previously developed unit cost estimates for components and should in no way be construed as representing the cost estimate for the components. Values shown on this table were derived by ETSI as follows:

Sum of estimated cost of components in county	x	Statewide ratio of assessed value to market value	=	Assessed valuation of ETSI Components	x	Property tax rate (percent) assumed for county	=	Estimated ETSI property taxes (in 1980 $)

[2]US Bureau of the Census, 1977 Census of Governments.

[3]Column 6 is the sum of estimated ETSI Assessed Valuation (AV) as of 1980 and the 1976/77 total county assessed valuation (i.e., column 6 = column 1 + column 4).

Column 7 is the ratio of the ETSI AV to the 1976/77 total county AV expressed as a percent (i.e., column 7 = column 1 divided by column 4).

Column 8 is the sum of the estimated ETSI property tax revenues and the 1976/77 total county property tax revenues (i.e., column 8 = column 3 plus column 5).

Column 9 is the ratio of the estimated ETSI revenues to the 1976/77 total county property tax revenues expressed as a percent (i.e., column 9 = column 3 divided by column 5).

SOCIOECONOMIC IMPACT SUMMARY AREA 16MA: BATON ROUGE

BASELINE CONDITIONS

The proposed dewatering plant under the market alternative at Baton Rouge would be built in a large metropolitan area (1978 population: 332,300).

PROJECT COMPONENTS AND ACTIVITIES

Market alternative only:

- Baton Rouge dewatering plant (5.8 MMTA): peak work force of 259 in 1985; would be constructed concurrently with Exxon Cogeneration Plant.
- Baton Rouge lateral from New Roads: second or third quarter of 1984; total work force of 260 men.

SOCIAL AND ECONOMIC EFFECTS

(Changes in local conditions due to ETSI, and significance)

Construction

Fixed-site construction work force expected to be entirely local. In-migration of 169 temporary pipeline construction workers and families would have an insignificant effect on the area's population, housing, and social services.

Operation

Creation of 40 direct jobs. Estimated generation of 44 secondary jobs. Estimated area population increase of 189 persons presents insignificant impact on the area's population, housing, and social services.

Abandonment

Loss of direct and secondary employment; reduction of property tax revenues.

CUMULATIVE EFFECTS

No significant cumulative effects.

BATON ROUGE, LA. STUDY AREA IMPACT SUMMARY

Impact Summary Affected Area Baton Rouge, La. Alternative: Market Only

Social/Economic Indicator	Baseline Conditions		Construction Impacts			Operation Impacts	
Employment	Construction	24,675	Fixed site			Direct:	40 jobs
			Local	259	1%	Secondary:	44 jobs
	Total labor	202,075	Nonlocal				
			Mobile				
			Local	130	Not Significant		
			Nonlocal	130	Not Significant		
Population			Fixed site			189 persons	.06%
	Baton Rouge	332,300 (1978)	Nonlocal	0			
			Mobile				
			Nonlocal	169	NS		
Housing							
	Baton Rouge	3,500 motel and hotel rooms	Demand for 80 temp units		2%	Not Significant	
Public Services	Not Significant		Not Significant			Not Significant	

Property Tax Base and Revenues	1976/1977 Assessed Valuation (x $1000)	Property Tax Revenue (x $1000)	ETSI Minimum Tax Revenues (x $1000) 1980	ETSI Revenues as Percent of 1976/77 Revenues
East Baton Rouge	711,942	36,694	369	1
West Baton Rouge	25,459	2,562	167	5

5.K WILTON: AREA 17

LOCAL STUDY AREA

The proposed Wilton dewatering plant would be situated on the downstream left bank of the Mississippi River in St. James Parish, Louisiana. This site is about 40 miles from Baton Rouge and about 65 miles from New Orleans. Several smaller communities are located closer to the site. Because the Wilton extension of the slurry pipeline would pass through Iberville and Ascension parishes, these parishes are included in the study area (Figure 5-11)

The Wilton dewatering plant, pump station, and pipeline would be built under the proposed action or the market alternative.

BASELINE CONDITIONS

Population and Employment

Several smaller communities are located within commuting distance of the site (Table 5K-1). Both Baton Rouge and New Orleans would be the sources of construction labor for the proposed dewatering plant. In 1978, construction employment in St. James Parish totaled 800; in the region including New Orleans and Baton Rouge, 61,075 persons were employed in construction (Table 5K-2).

Construction of the proposed dewatering plant would coincide with the construction of Louisiana Power and Light Company's Wilton Steam Electric Station. However, since the work force in St. James Parish and in the Baton Rouge and New Orleans SMSAs exceeds 60,000, there should be no need for in-migrant construction workers.

Housing. All the work force for the dewatering plant would be local. Thus there would be no impact on housing, and consequently no data are presented here.

Public Services. Since there would be no impact on public services and facilities in the project area, no data are presented here.

PROJECT COMPONENTS

The project components in Ascension, Iberville, and St. James parishes are:

- Main slurry pipeline (New Roads to Wilton lateral)
- Wilton dewatering plant (PM(NW)-141.5)
- Pump station PM(NW)-3(PM(NW)-108)

ETSI PROJECT IMPACT ON WILTON STUDY AREA

Construction

Schedule and Personnel. The Wilton dewatering plant units would employ about 156 workers at peak in 1986 (Table 5K-3). The pump station in Iberville parish would employ a peak of 42 workers in the first and second quarters of 1986.

The main slurry pipeline segment that would be constructed to Wilton is expected to be constructed in the third quarter of 1984. Total spread work force would be about 260. Half (130) the pipeline construction crew is expected to come from the local area; the remaining half would be nonlocals.

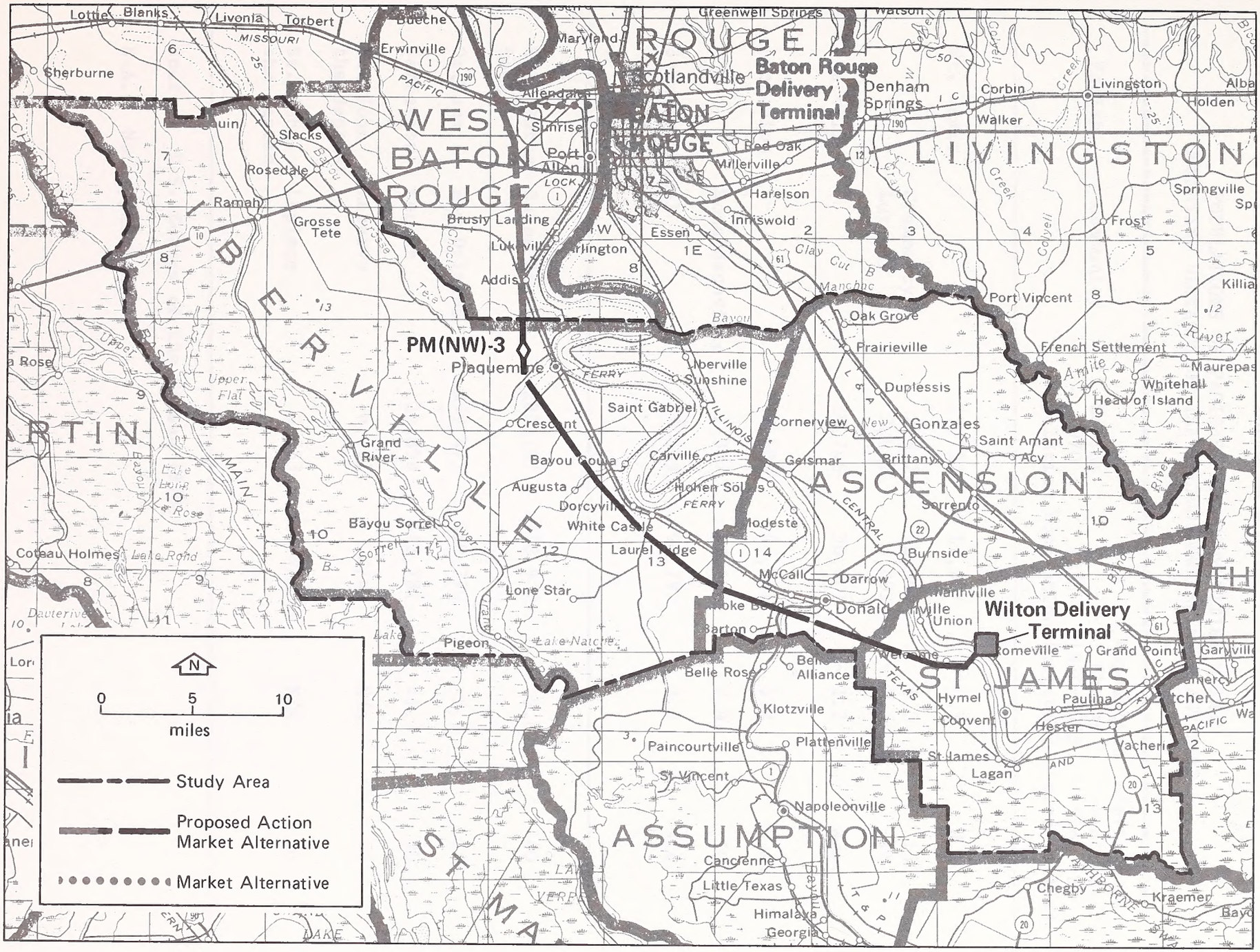

Figure 5-11. WILTON LOCAL STUDY AREA

TABLE 5K-1

POPULATIONS OF PARISHES AND COMMUNITIES WITHIN
COMMUTING DISTANCE OF THE WILTON DEWATERING PLANT SITE

Parish	Community	Census 1970 Population	1975 Population	Population Change 1970-1975 (percent)	Approximate Distance from the site (miles)
St. James		19,733	19,507	- 0.7	N.A.
	Grammercy	2,567	2,594	1.0	15
	Lutcher	3,911	3,893	- 0.5	15
Iberville		30,746	30,601	- 1.2	N.A.
Ascension		37,086	40,691	8.2	N.A.
	Donaldsonville	7,367	7,580	2.9	10
3-Parish Total		87,565	90,799	3.6	N.A.
East Baton Rouge	Baton Rouge	285,167	310,922	9.0	40
Orleans	New Orleans	593,471	559,770	- 5.7	65
Jefferson	Kenner	129,858	43,781	46.7	50
St. John the Baptist	Reserve	6,381	N/A	N/A	25
St. John the Baptist	Laplace	5,953	N/A	N/A	30

Source: U.S. Bureau of the Census 1978.

N.A.: Not Applicable.

TABLE 5K-2

1978 EMPLOYMENT: BATON ROUGE SMSA;
NEW ORLEANS SMSA; AND ST. JAMES,
ST. JOHN THE BAPTIST, AND ST. CHARLES PARISHES

	Civilian Labor Force	Employment	Unemployment	Rate (percent)	Employed in Construction
Parish					
St. James	8,300	7,500	800	9.6	800
St. John the Baptist	12,400	11,375	1,025	8.3	1,375
St. Charles	70,250	18,750	1,500	7.4	5,525
Subtotal	40,950	37,625	3,325	-	7,700
SMSA					
Baton Rouge SMSA[1]	202,075	188,950	13,125	6.5	24,675
New Orleans SMSA[2]	463,000	431,400	31,600	6.8	28,700
Total	706,025	657,975	48,050	-	61,075

Source: Louisiana Department of Labor, various undated tables.

[1]Includes East and West Baton Rouge, Livingston, and Ascension parishes.

[2]Includes Orleans, Jefferson, St. Bernard, and St. Tammany parishes.

TABLE 5K-3

CONSTRUCTION MANPOWER DEMAND:
WILTON AREA

Components	Year/Quarter																			
	1985				1986				1987				1988				1989			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Dewatering Plant[1]																				
Unit #1 (2.5 MMTA)			7	46	88	140	156	132	93	43										
Unit #2 (2.5 MMTA)													20	45	65	70	60	40		
Pump Station (PM (NW) -3)				17	42	42	33	33	32	27										
Fixed-Site Subtotal				63	130	182	189	165	125	70			20	45	65	70	60	40		
Pipeline Spread VI	[260 in 3rd quarter 1984]																			
Louisiana Power and Light Co.[2]																				
Wilton Units #1 and #2	370	450	520	595	685	880	955	890	705	575	605	690	730	780	760	680				

[1] Manpower estimates are derived for a 5.0 MMTA dewatering plant built up to capacity in two increments. Approximately 70 percent of total manpower is required in the first construction phase, as all the plant layout and concrete work is done in the first phase.

[2] Wilton manpower estimate and scheduling is the same as for White Bluff and Independence, as provided by Joel D. Patterson, Middle South Services, letter February 5, 1980. 1988 and 1990 commercial dates for Units #1 and #2 are assumed. (Peak at Independence Power Plant may be 100 workers less, according to Bob Walsh, Brown and Root Project Manager, 1980).

Employment and Population: Changes Caused by ETSI. Since the regional construction labor pool has more than 60,000 workers, all construction workers are expected to come from the region. In-migration of nonlocal workers to construct the dewatering plant is not expected. The dewatering plant construction would create no significant new secondary employment or significant population shifts (Table 5K-4).

Assuming that half of the 260 pipeliners constructing the New Roads to Wilton lateral would be nonlocal, approximately 130 pipeliners could be expected to cause a temporary area population increase of 169 (Table 6-3). However, in an area of almost a million people, this increase is not significant.

Housing. Since no significant in-migration of nonlocal construction workers is necessary to build the dewatering plant, the construction of the dewatering plant and pump station would have no significant impact on housing.

Assuming that half the 260 pipeliners constructing the New Roads to Wilton lateral would be nonlocal, approximately 130 workers and their families would require about 80 temporary units in the Wilton area. The impact on housing availability in the area would be insignificant.

Public Services. Construction of the Wilton dewatering plant and of the pipeline would not create any significant increase in demand for public services.

Operation

During operation, the Wilton dewatering plant would employ about 34 persons.

TABLE 5K-4

ESTIMATED EMPLOYMENT AND POPULATION INCREASES DURING CONSTRUCTION OF WILTON DEWATERING PLANT

EMPLOYMENT	
Direct Employment	
Peak Construction Work Force x assumed percentage nonlocal[1] (0) = nonlocal direct construction employment (0)	189
Secondary Employment	
Nonlocal direct construction employment (0) x secondary employment multiplier[2] (.6) = secondary employment (0)	0
Secondary employment (0) x Assumed percent nonlocal[1] (0)	
Total Employment	189
POPULATION	
Nonlocal direct construction employment (0) x percent single (40%)[2] = nonlocal direct singles	0
Nonlocal direct construction employment (0) x percent with families (60%)[2] = (0) x average family size (3.7)[2] = nonlocal direct with family members	0
Nonlocal secondary employment (0) x percent single (50%)[2] = nonlocal secondary singles	0
Nonlocal secondary employment (0) x percent with families (50%)[2] = (0) x average family size (3.7)[2] = nonlocal secondary with family members	0
Total New Nonlocal Population	0

[1] Assumptions based on review of labor force availability and experience with other construction projects.

[2] Adapted from HUD 1976, 75.

Employment and Population: Changes Caused by ETSI. Assuming that all direct jobs would be taken by nonlocals (a worst-case assumption), an additional 37 secondary jobs would be generated, and a population increase of approximately 160 persons would occur (Table 5K-5).

Housing. No significant effects on the local housing market are expected from operation and maintenance of the Wilton dewatering plant.

Public Services. No significant increase in demand for public services is expected.

Property Tax Revenues. The Wilton dewatering plant would add to the tax base in Assumption Parish and would generate increased tax revenues to the parish and its taxing jurisdictions, as indicated in Table 5K-6.

Abandonment

Upon abandonment, the operation and maintenance positions at the site would be eliminated. There would be some short-term "construction" employment during demolition.

Property tax revenues, already reduced by depreciation of the capital improvements, would decline further. Assessed value would equal salvage value of the remaining improvements plus the value of the land.

CUMULATIVE IMPACTS

Construction of the dewatering plant would coincide with construction of Louisiana Power and Light Company's Wilton Steam Electric Station. Aggregate manpower demand at the site would be around 1100 workers in the third quarter of 1986. The construction of the dewatering plant would help stimulate the area's economy.

TABLE 5K-5

ESTIMATED EMPLOYMENT AND POPULATION INCREASES DURING OPERATION OF THE WILTON DEWATERING PLANT

EMPLOYMENT	
Direct Operation and Maintenance Employment	34
Assume 100 percent nonlocal as a worst case	
Secondary Employment	
Nonlocal direct employment (34) x secondary employment multiplier[1] (1.1) = secondary employment	37
Nonlocal Secondary Employment	
Secondary employment (37) x assumed percentage nonlocal[2] (80%) = nonlocal secondary employment (30)	
Total Employment	71
POPULATION	
Nonlocal direct employment (34) x percent single[3] (40%) = nonlocal direct singles	14
Nonlocal direct employment (34) x percent with families (60%) = (20) x average family size[3] (3.7) = nonlocal secondary singles	75
Nonlocal secondary employment (30) x percent single (50%) = nonlocal secondary singles	15
Nonlocal secondary employment (30) x percent with families (50%) x average family size (3.7) = nonlocal secondary with family members	56
Total New Population	160

[1]Secondary employment multiplier adopted from HUD 1976, p. 5.

[2]Mix of locals and nonlocals taking secondary employment adopted from HUD 1976, p. 5.

[3]Percent single, percent with families and family size factors adopted from HUD, 1976, p. 5.

TABLE 5K-6

ESTIMATES OF ETSI PROPERTY TAXES AND COMPARISON WITH EXISTING COUNTY PROPERTY TAXES 1976/77
WILTON STUDY AREA ALTERNATIVES: Proposed Action, Market, Barge

	Estimated ETSI Property Tax[1] (1980 Dollars)			County Local Property Tax[2] 1976/77		Evaluation of ETSI (1980 $) Revenues[3]			
Parish	Assessed Valuation of ETSI Components (x $1000)	Tax Factor (percent)	Revenues (x $1000)	Assessed Valuation Subject to Tax (x $1000)	Property Tax Revenues (x $1000)	ETSI Assessed Valuation and Existing Assessed Valuation (x $1000) [1+4] (6)	ETSI Assessed Valuation as a % of Existing Assessed Valuation (x $1000) [1÷4] (7)	Sum ETSI Revenues and 1976/77 Revenues (x $1000) [3+5] (8)	ETSI Revenues as a Percent of 1976/77 Revenues [3÷5] (9)
	(1)	(2)	(3)	(4)	(5)				
Pipeline & Pump Station									
Iberville(d)	4,200	0.88	40	65,212	3,212	69,412	6	3,252	1
St. James	1,600	1.53	24	38,310	3,876	39,910	5	3,900	0.6
Ascension(d)	1,900	1.09	20	68,129	3,731	14,550	3	3,757	0.5
Dewatering Plant									
St. James	26,700	1.53	409	38,310	3,876	65,010	70	4,285	11
Total									
Iberville	4,200	0.88	40	65,212	3,212	69,412	6	3,252	1
St. James	28,300	1.53	433	38,310	3,876	66,610	74	4,309	11
Ascension	1,900	1.09	20	68,129	3,731	14,550	3	3,757	0.5

[1]ETSI 1980

Assessed Value and property taxes by county were estimated by ETSI by extrapolating previously developed unit cost estimates for components and should in no way be construed as representing the cost estimate for the components. Values shown on this table were derived by ETSI as follows:

Sum of estimated cost of components in county	x	Statewide ratio of assessed value to market value	=	Assessed valuation of ETSI Components	x	Property tax rate (percent) assumed for county	=	Estimated ETSI property taxes (in 1980 $)

[2]US Bureau of the Census, Census of Governments.

[3]Column 6 is the sum of estimated ETSI Assessed Valuation (AV) as of 1980 and the 1976/77 total county assessed valuation (i.e., column 6 = column 1 + column 4).

Column 7 is the ratio of the ETSI AV to the 1976/77 total county AV expressed as a percent (i.e., column 7 = column 1 divided by column 4).

Column 8 is the sum of the estimated ETSI property tax revenues and the 1976/77 total county property tax revenues (i.e., column 8 = column 3 plus column 5).

Column 9 is the ratio of the estimated ETSI revenues to the 1976/77 total county property tax revenues expressed as a percent (i.e., column 9 = column 3 divided by column 5).

SOCIOECONOMIC IMPACT SUMMARY AREA 17: WILTON

BASELINE CONDITIONS

Wilton dewatering plant, pump station and slurry pipeline sites are within commuting distance of a population over close to a million, with a construction labor force of over 60,000.

PROJECT COMPONENTS AND ACTIVITIES

- Proposed action and market alternative: Wilton dewatering plant-two 2.5 MMTA units; peak work force of 156 in third quarter 1986
- Wilton pump station: peak work force 42 in first and second quarter of 1986
- Total fixed-site construction work force peak of 189
- Main slurry pipeline: New Roads to Wilton lateral, third quarter 1984, total work force of 260 men; operation work force of 34

SOCIAL AND ECONOMIC EFFECTS

(Changes in local conditions due to ETSI, and significance)

Construction

Fixed-site construction work force is expected to be entirely local. In-migration of 169 temporary pipeline construction workers and families would have no significant effect on the area's population, housing, and social services.

Operation

Creation of 34 direct jobs and 37 secondary jobs. Area population increase of an estimated 160 persons would have an insignificant impact on the area's population, housing, and social services.

Abandonment

Loss of direct and secondary employment; reduction of property tax revenues.

CUMULATIVE EFFECTS

No significant cumulative effects.

WILTON, LA. STUDY AREA IMPACT SUMMARY
Alternative: Proposed Action and Market

Social/Economic Indicator	Baseline Conditions		Construction Impacts			Operation Impacts	
Employment	Regional Construction	61,075 (1978)	Fixed-site			Direct: 34 jobs	NS
			Local	189	.3%		
			Nonlocal	0		Secondary: 37 jobs	NS
			Mobile				
			Local	130	NS		
			Nonlocal	130	NS		
Population	Baton Rouge	332,300 (1978)	Fixed site	0		160 persons	NS
	New Orleans	559,200 (1978)					
	St. James	19,507 (1975)	Mobile	169			
	Iberville	30,601 (1975)					
	Ascension	40,691 (1975)					
	Total	982,299					
Housing	Not Inventoried		80 temporary units			Not Significant	
Public Services	Not Significant		Not Significant			Not Significant	

Property Tax Base and Revenues	1976/1977 Assessed Valuation (x $1000)	Property Tax Revenues (x $1000)	ETSI Minimum Tax Revenues (x $1000)	ETSI Revenues as Percent of 1976/77 Revenues
Iberville	65,212	3,212	40	1
St. James	38,310	3,876	433	11
Ascension	68,129	3,731	20	0.5

NS = Not significant

5.L. CYPRESS BEND: AREA 18

LOCAL STUDY AREA

The Cypress Bend terminal would be constructed as part of the pipeline-barge alternative only. The site of the proposed Cypress Bend dewatering plant, steam plant, and barge-loading facility is in Desha County, Arkansas (Map A-052). The local study area includes Desha, Drew, Chicot, Ashley, and Lincoln counties (Figure 5-12).

BASELINE CONDITIONS

In 1974, employment in agriculture was 2485, or 34.2 percent of the 7279 total employment in Desha County (BEA 1976).

Population and Employment

The nearest communities to the site are Arkansas City and McGehee, Arkansas. The local study area includes several more communities: Dermott, Monticello, Dumas, and Lake Village (Table 5L-1). The nearest cities are Greenville, Mississippi (57 miles away) and Pine Bluff, Arkansas (77 miles away).

Populations of the five counties in the local study area are shown in Table 5L-1. In the 1960s and 1970s, Desha County did not undergo the growth experienced by other Arkansas counties; in fact, it actually lost population in the 1960s and 1970s, as a result of a decline in agriculture and forest products production.

Desha County, like much of southeastern Arkansas, has been primarily rural and agricultural. Neither the five-county area nor Desha County has a large labor force or a large pool of contract construction workers (Table 5L-2). In 1977, the five-county study area had

964 persons employed in contract construction; Desha County had 117 persons. The ten-county southeastern Arkansas labor area, however, had 2724 employed in contract construction.

The average unemployment rate in Desha County between July 1975 and July 1976 was 9.05 percent (the high--12.5 percent--occurred in January 1976; the low--6.9 percent--occurred in September 1975). The unemployment rate for Desha County was 5.9 percent in April 1978 (Ellers et al. 1979).

The late 1970s have brought some changes, and there have been continuing efforts to develop the local economy. The Potlatch Corporation completed a $15 million paper mill in the area in 1977. The mill is 7 to 8 miles due north of Arkansas City and 8 miles east of McGehee. The peak construction work force was 1000 for six to eight months. Tradesmen were hired out of union halls in El Dorado (electricians), Pine Bluff (pipefitters), and Little Rock (iron-workers). Others came from union halls in Greenville, Mississippi and Monroe, Louisiana. Laborers were hired from a temporary laborers' union hall set up in Arkansas City (Wilson 1980).

Of the Potlatch construction work force, 85 percent was nonlocal; only 15 percent was from the local area. During construction, many nonlocals moved to the area on a temporary basis, and 75 percent of the work force commuted daily from within 40 miles of the construction site. The other 25 percent was made up of nonlocals who commuted daily from places up to 100 miles away (e.g., Greenville, Mississippi; Pine Bluff, Arkansas; Monroe, Louisiana). Housing was tight locally, and some workers slept in their pickup campers (Wilson 1980).

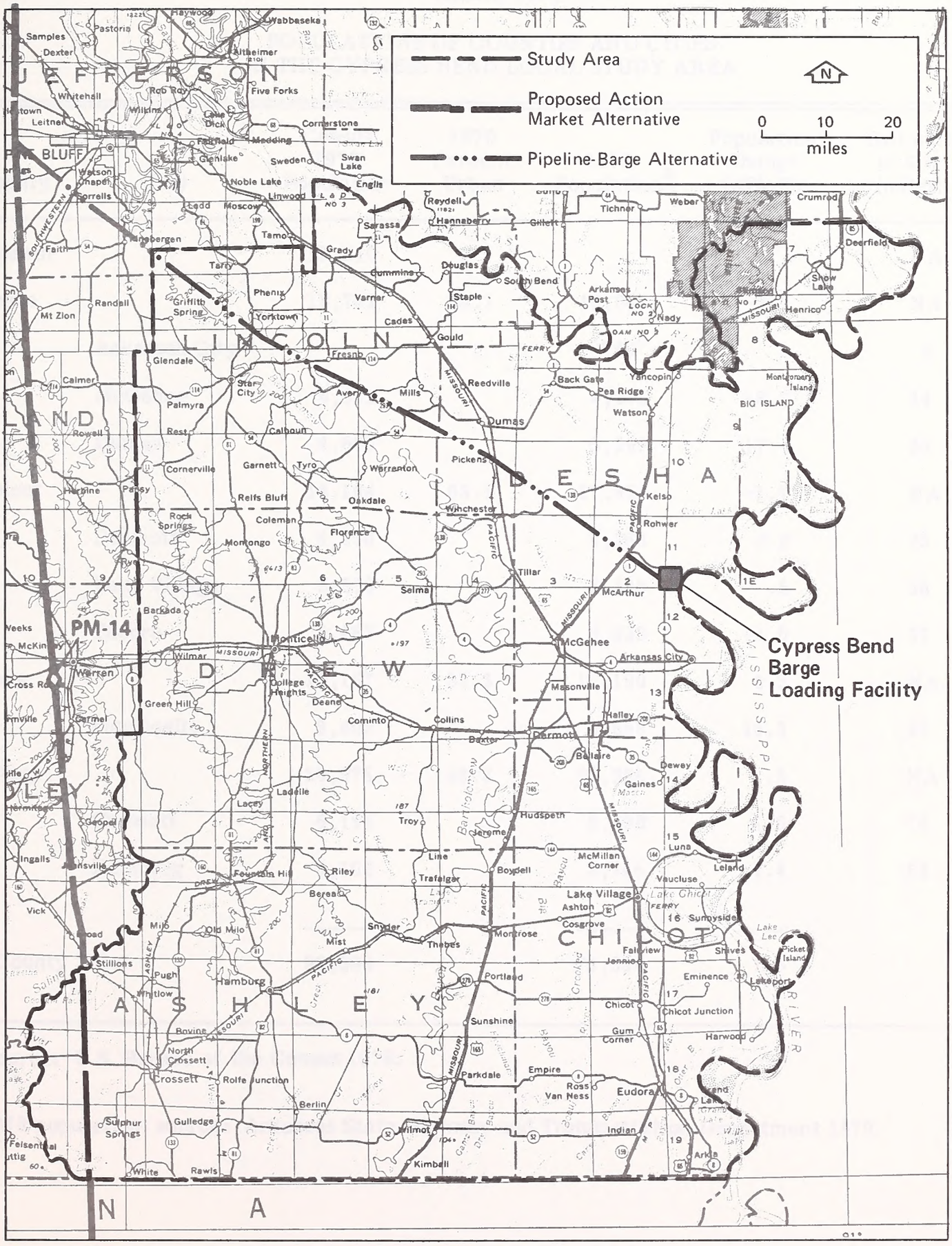

Figure 5-12. CYPRESS BEND LOCAL STUDY AREA

TABLE 5L-1

POPULATIONS OF COUNTIES AND CITIES
IN THE CYPRESS BEND LOCAL STUDY AREA

County	City	Census 1970 Population	1970 Percent Urban	1975 Population[a]	Population Change 1970-75	Distance to Site (miles)
Lincoln		13,310	0			NA
Desha		18,761	50.1	18,005	-2.7	NA
	Arkansas City			784[b]		8
	McGehee	4,683		4,275	-8.7	14
	Dumas	4,600		5,399	17.4	32
Chicot		18,164	63.1	17,953	-1.1	NA
	Dermott	4,250		4,368	2.8	25
	Lake Village	3,310		3,328	.5	36
	Eudora	3,687		3,538	-4.0	52
Drew		15,157	33.5	17,190	2.5	NA
	Monticello	5,809		6,698	15.3	42
Ashley		24,976	48.8	25,206	.5	NA
	Crossett	6,191		6,290	1.6	78
	Hamburg	3,102		3,146	1.4	63
5-County Total		90,368		78,354	1.6	

[a]Source: U.S. Bureau of the Census 1978.

[b]1979 population; source: Arkansas State Highway and Transportation Department 1979.

TABLE 5L-2

EMPLOYMENT BY MAJOR INDUSTRY (1977)
SOUTHEASTERN ARKANSAS LABOR AREA

	10-County Labor Area	Arkansas County	Ashley County	Bradley County	Chicot County	Cleveland County	Desha County	Drew County	Grant County	Jefferson County	Lincoln County	5-County Local Study Area*
Total Employment	48,457	6,450	6,401	3,168	1,918	333	3,403	4,228	1,683	19,817	1,056	17,006
Manufaeturing	20,646	2,708	3,969	1,886	570	194	1,307	2,383	1,002	6,240	387	8,616
Mining		a	NA	NA	NA	NA	NA	NA	a	b	NA	NA
Contract Construction	2,724	425	462	197	102	14	117	154	61	1,053	139	974
Transportation and Other Public Utilities	2,543	387	112	51	86	17	206	96	37	1,475	76	576
Wholesale Trade	2,927	702	225	94	172	a	254	119	47	1,235	79	849
Retail Trade	9,817	1,303	796	485	532	53	862	803	324	4,464	195	3,188
Finance, Insurance, and Real Estate Services	2,173	256	167	120	108	a	142	142	47	1,155	36	595
Agricultural Serviees, Forestry, Fisheries	519	57	39	b	b	a	75	261	a	87	a	375

Souree: U.S. Bureau of the Census 1979e.

Notes: Figures indieate number of employees for week ineluding Mareh 12, 1977. NA = Information not available.
Employment-size class 0-19
Employment-size elass 20-99

* Five-eounty loeal study area eonsists of Ashley, Chicot, Desha, Drew, and Lincoln counties.

Housing

The main concern with regard to the effect on the local impact area is the availability of temporary housing. At present, housing of any kind is scarce.

Potlatch Corporation presently employs 300 people at the paper mill near the Cypress Bend site. Some of these commute from as far away as Monticello (about 42 miles). The estimated available housing in four communities in the area is shown in Table 5L-3. While vacancy rates in the four communities are low, there are differing opinions as to how tight the market is and how responsive it might be to additional demand in the area.

Several local mobile home parks constructed new spaces from 1975 to 1977, during the Potlatch paper mill construction. Currently, some mobile home spaces are available.

There has been some new construction of single-family homes in the area. In Dumas, 32 miles from the Cypress Bend site, some 25 to 30 new homes are under construction. Voters in Dumas recently passed a $10 million bond issue, of which $5.5 million has been made available for home loans at 8.5 percent interest (Peterson 1980).

Arkansas City has no hotel or motel accommodations. The other three local communities--McGehee, Dermott, and Dumas--have 200 to 225 hotel or motel rooms among them (Table 5L-3).

Public Services

Public services were inventoried for the four communities: Arkansas City, McGehee, Dermott, and Dumas. Since it would be to these communities that the bulk of the nonlocals would move during construction, this is where impacts would be concentrated. Other

TABLE 5L-3

TEMPORARY HOUSING AVAILABLE IN 1980 AT CYPRESS BEND AREA

Town	Dwelling Units: Single-Family	Dwelling Units: Multiple Units	Mobile Homes	Total	Vacancy Rate	Motel Units
Arkansas City	200	230	35	465	1-2%	0
McGehee	1600	200	150	1950	0	125
Dermott	1000	20	250	1270	0 single-family 2-3% mobile homes	50
Dumas	2000	45	40	2085	low	48
Total	4800	495	475	5770		223

Sources: Bixler 1980; Fields 1980; McMahon 1980; Franks 1980; and Peterson 1980.

communities (e.g., Monticello) may host some in-migrants, but not to the extent of these four.

Water and sewer systems in these four communities generally are adequate (Table 5L-4). The Dermott water system could use an additional 300,000-gallon water tank. Dumas' sewer system is overloaded: 2000 people use a system designed to serve 1500. A $2.0 million overhaul of the system is planned for the next two years.

The school districts in all four communities have plans for expanding or upgrading facilities. Facilities, enrollments, and student/teacher ratios are shown in Table 5L-5. The Arkansas City School District, which includes the Cypress Bend site, receives $600,000 per year in property tax revenues from the new Potlatch paper mill and plans to construct a new high school. Dermott plans to build a new junior high school. McGehee has built a new elementary school and four new high school classrooms, and plans to build a new junior high school. Dumas built a new high school four years ago.

Police service in all four communities is considered adequate, and currently there are no plans for increased staffing or capital improvements (Table 5L-6).

Fire departments in the four communities are mostly volunteer. Present staffing, equipment, and facilities are considered adequate (Table 5L-6). New fire stations have been built in Arkansas City and McGehee. With the exception of McGehee (whose department needs to buy a new fire truck), there are no planned future capital expenditures.

TABLE 5L-4
WATER AND WASTEWATER SYSTEMS IN THE CYPRESS BEND AREA

City	Water				
	Source	Storage	Peak Demand	Average Demand	Comments
Arkansas City	Individual wells and 2 community wells	2 tanks/ 290,000 gal.	28,750 gpd	22,916 gpd	Not much excess capacity; no future plans unless there is rapid growth
McGehee	3 wells	2 tanks/ 700,000 gal.	2.5 million gpd	1 million gpd	360,000 gpd excess capacity; upgraded water lines last year
Dermott	3 wells	2 tanks/ 400,000 gal.	2.94 million gpd	2.01 million gpd	Present level of service adequate but could use a 300,000-gal. tank
Dumas	2 wells	3 tanks/ 850,000 gal.	1 million gpd	800,000 gpd	Excellent level of service; are trying to get another well

City	Wastewater			
	Treatment Type	Existing Users	Capacity*	Comments
Arkansas City	Lagoon	300	4,000	more than adequate; no plans
McGehee	Lagoon	2000	10,000	could double service before problems; sewers need repair
Dermott	Lagoons	unknown	7,000	No problem; won't reach capacity at present rate for 12 years
Dumas	Lagoon	2000	1,500	System overloaded; plan $2.0 million overhaul within 2 years

Sources: Bixler 1980; Frisby 1980; Hood 1980; Jackson 1980; Freeman 1980.

*Assumes all additional capacity is for residential users.

TABLE 5L-5
SCHOOLS IN THE CYPRESS BEND AREA

	SCHOOLS					
	Elem.	Jr. High	High School	Total Enrollment	Student/Teacher Ratio	Proposed Improvements
Arkansas City	1	0	1	200	15:1	Plan to build new high school
McGehee	1	1	1	1420	17.5:1	Have plenty of room; have new elementary school and 4 new high school classrooms; plan to upgrade junior high school
Dermott	1	1	1	1400	27:1	Plan to build new junior high school
Dumas	2, K-2 and 3-6	1	1	2335	25:1	High school built 4 years ago for 750 students; enrollment only 670. Plan to upgrade junior high

Sources: Jackson 1980; Bluerock 1980; Frisby 1980.

TABLE 5L-6
COMMUNITY SERVICES, POLICE AND FIRE PERSONNEL
IN CYPRESS BEND AREA

City	Police	Fire (Volunteer)
Arkansas City	1	17
McGehee	12	16
Dermott	12	22
Dumas	10	15

Sources: Frisby 1980; Hood 1980; Fields 1980; Frenks 1980.

PROJECT COMPONENTS

The ETSI facilities proposed for the Cypress Bend area include:

- Cypress Bend lateral slurry pipeline from White Bluff through Lincoln and Desha counties (32-inch O.D.)
- Cypress Bend dewatering plant (18.9 MMTA)
- Cypress Bend steam plant
- Cypress Bend barge-loading facility

ETSI PROJECT IMPACT ON CYPRESS BEND AREA

Impact calculation procedures are explained in the introduction to this chapter.

Construction

Schedule and Personnel. Construction of the Cypress Bend site would begin in the first quarter of 1983, and the first phase would be completed in the fourth quarter of 1984 (Table 5L-7). The pipeline, steam plant, and barge terminal would be built to full capacity from the start. The dewatering plant capacity would be increased in three increments. All site preparation and concrete work would be done initially, and the increments in capacity would be achieved by installing additional centrifuges, related equipment, piping, and controls. The peak fixed-site manpower demand would be about 715 in the first quarter of 1984.

TABLE 5L-7
CONSTRUCTION MANPOWER DEMAND: CYPRESS BEND DEWATERING PLANT (18 MMTA CAPACITY), STEAM PLANT AND BARGE TERMINAL

	Year/Quarter																					
	1983				1984				1985				1986				1987				1988	1989
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
Dewatering Plant	60	190	296	411	470	410	314	104	10	65	125	195	200	200	190	160	110	150	190	190	190	90
Steam Plant	50	125	150	175	200	170	150	25														
Barge Terminal			21	37	45	52	31	18														
Total Cypress Bend Site	110	315	467	623	715	632	495	147	10	65	125	195	200	200	190	160	110	150	190	190	190	90
Cypress Bend Lateral (Pipeline Spread V)							390															

Pipeline spread V would construct the Cypress Bend lateral from White Bluff during the third quarter of 1984 (Table 5L-7).

Employment and Population: Changes Caused by ETSI. The number of nonlocal construction workers expected to move into the area during construction would largely determine the social and economic effects in the local area. Therefore, a key factor is the ratio of local to nonlocal workers expected to be in the construction work force.

For the ETSI project facilities at Cypress Bend, it is assumed that the composition, source, and behavior of the construction work force will be similar to those of the work force that constructed the Potlatch paper mill (completed in Desha County in 1977). The paper mill is located less than 10 miles from the Cypress Bend site. It had a peak force of 1000 men--about 300 more than projected for ETSI-Cypress Bend (Wilson 1980).

Based on the Potlatch experience, the ratio of local to nonlocal workers at Cypress Bend is expected to be 15 percent local to 85 percent nonlocal. Of the total work force, 25 percent is expected to commute on a daily basis from further than 40 miles away (i.e., from places such as Pine Bluff, Little Rock, and Greenville, Mississippi; and Monroe, Louisiana) (Wilson 1980). Of the total work force, 60 percent is expected to be nonlocals relocating temporarily to residences within 40 miles of the job site.

The steps and factors used to estimate changes in employment and population are shown in Table 5L-8. With an estimated peak construction work force of 715 in the first quarter of 1984, some 608 of these workers are estimated to be nonlocal. Of these, 429 are expected to

relocate to the local area during construction, and 179 are expected to commute from 60 to 100 miles away. About 107 local workers would be employed at the peak.

The secondary employment generated by the construction of the Cypress Bend site is estimated to be about 365 new service jobs that would be spread throughout the local area (i.e., communities within 40 miles of the site, such as Arkansas City, McGehee, Dermott, and Dumas). Most of the estimated 365 new secondary jobs would be filled by present residents of local communities that host the nonlocal construction workers.

The pipeline spread construction work force for the Cypress Bend lateral would be 390. Half is assumed to be nonlocal; the other half is expected to reside within 100 miles (this radius includes the Little Rock and Pine Bluff areas). Pipeline construction would cause no significant secondary employment to be generated.

Population increase due to the ETSI fixed-site construction at Cypress Bend would be approximately 1600 persons at most (Table 5L-8). This in-migrant population would be distributed among communities within 40 miles of the site, principally in Arkansas City, McGehee, Dermott, and Dumas. When the pipeline would be under construction in the third quarter of 1984, 275 nonlocal pipeliners would be in the area. Total mobile pipeline population would be about 300 (Table 6-3).

Housing. Assuming that half the estimated 243 single nonlocal workers at Cypress Bend doubled up to share housing, they would require about 182 units. Assuming that the estimated 365 nonlocal workers with families required housing units at the rate of one per family, the total estimated peak demand for housing units in the area

TABLE 5L-8
ESTIMATED EMPLOYMENT AND POPULATION INCREASES DURING CONSTRUCTION OF CYPRESS BEND DEWATERING PLANT, STEAM PLANT, AND BARGE-LOADING FACILITY

EMPLOYMENT	
Direct Employment	
Peak construction work force	715
x assumed percentage nonlocal[1] (85%)	
= nonlocal direct construction employment (608)	
Secondary Employment	
Nonlocal direct construction employment (608)	
x secondary employment multiplier[1] (.6)	
= secondary employment (365)	365
Secondary Employment (365)	
x assumed percentage nonlocal[1] (0)	
Total Employment	1080
POPULATION	
Nonlocal direct construction employment (608)	
x percent single (40%)[2]	
= nonlocal direct singles	243
Nonlocal direct construction employment (608)	
x percent with families (60%)[2] = (365)	
x average family size (3.7)[2]	
= nonlocal direct with family members	1350
Nonlocal secondary employment (0)	
x percent single (50%)[2]	
= nonlocal secondary singles	0
Nonlocal secondary employment (0)	
x percent with families (50%)[2] = (0)	
x average family size (3.7)[2]	
= nonlocal secondary with family members	0
Total New Nonlocal Population	1593

[1]Assumptions based on review of labor force availability and experience with other construction projects.
[2]Adapted from HUD 1976, p. 5.

would be a maximum of about 547 in the first quarter of 1984. Because rental housing of any kind is in very short supply, mobile homes would provide the principal solution to the demand for housing created by the in-migrant population working on the Cypress Bend construction projects.

Pipeline construction workers would demand an estimated 165 housing units in the area in the third quarter of 1984. Since this figure constitutes over 75 percent of the 223 hotel and motel units in the four local communities, some nonlocal pipeliners might have to commute daily from further away (i.e., Pine Bluff, Monroe, Little Rock).

Providing housing for the construction workers and their families moving to the area to construct the dewatering plant and barge facilities would not pose a large problem. The area has already handled a similar situation successfully. When the Potlatch paper mill was being constructed, during which time a peak of 1000 workers was employed, local mobile home parks expanded their facilities and additional mobile homes were brought in. In Dumas and the surrounding area, 100 or more vacant mobile home spaces are available. These communities had no serious problems accommodating the influx of people during the Potlatch mill construction and would welcome the growth opportunity provided by the ETSI construction period. No major problems are expected (Peterson 1980).

Public Services. Increased demands during construction of the dewatering plant and barge-loading facility is not expected to put any significant stress on local public facilities and services. With the exception of Dermott, which needs an additional 300,000-gallon water storage tank, the local communities inventoried have excess capacity in both water and sewage disposal systems.

School districts in all four communities are expanding and upgrading facilities. They could accommodate increases in enrollment in 1982 and 1984.

The Potlatch paper mill is contributing considerable property tax revenues to Desha County, and the local public services are fiscally healthy. For example, the Arkansas City School District receives some $600,000 per year from property taxes on the Potlatch paper mill and plans to construct a new high school.

Operation

Personnel. Operation of a dewatering plant and barge-loading facility at the Cypress Bend site would require 167 persons.

Employment and Population: Changes Caused by ETSI. The 167 new jobs at the Cypress Bend site would in turn lead to the creation of secondary jobs locally, and an increase in the local population.

Assuming that all 167 operation and maintenance jobs were taken by nonlocals who moved into the area (a "worst-case" assumption), and assuming a secondary employment multiplier of 1.1, about 184 new secondary jobs would be generated in the local area (Table 5L-9).

The new population attracted to the area by new permanent direct and secondary employment opportunities is estimated to total about 780. These people would locate throughout the area, principally in the communities of Arkansas City, McGehee, Dermott, and Dumas.

Housing. An estimated 280 housing units would be necessary to house the in-migrant employees (both direct and secondary) and their families (Table 5L-10).

TABLE 5L-9.
EMPLOYMENT AND POPULATION INCREASES DURING
OPERATION, CYPRESS BEND DEWATERING PLANT

EMPLOYMENT	
Direct Operation and Maintenance Employment	167
o Assume 100 percent nonlocal as a worst case	
Secondary Employment	
Nonlocal direct employment (167)	
x secondary employment multiplier[1] (1.1)	
= secondary employment	184
Nonlocal Secondary Employment	
Secondary employment (184)	
x assumed percentage nonlocal[2] (80%)	
= nonlocal secondary employment (147)	
Total Employment	351
POPULATION	
Nonlocal direct employment (167)	
x percent single[3] (40%)	
= nonlocal direct singles	67
Nonlocal direct employment (167)	
x percent with families (60%) = (100)	
x average family size[3] (3.7)	
= nonlocal direct with family members	370
Nonlocal secondary employment (147)	
x percent single (50%)	
= nonlocal secondary singles	74
Nonlocal secondary employment (147)	
x percent with families (50%)	
x average familiy size (3.7)	
= nonlocal secondary with family members	272
Total New Population	783

[1]Secondary employment multiplier adapted from HUD 1976, p. 5.
[2]Mix of locals and nonlocals taking secondary employment adapted from HUD 1976, p. 5.
[3]Percent single, percent with families, and family size factors adapted from HUD 1976, p. 5.

TABLE 5L-10
ESTIMATE OF NEW HOUSING UNITS REQUIRED DURING OPERATION
OF CYPRESS BEND DEWATERING PLANT AND BARGE FACILITY[1]

New Employee Type	Housing Factor[2]	Housing Units Demanded
Nonlocal direct single =	67 x .75 =	50
Nonlocal secondary single =	74 x .75	56
Nonlocal direct with families =	100 x 1	100
Nonlocal secondary with families =	74 x 1	74
	Total units demanded	280

[1] Employment numbers from Table 5L-3.

[2] Assumes that half of nonlocal permanent single workers who move into the area to work at the Cypress Bend facilities or in secondary jobs would share housing with one other nonlocal single in-migrant worker.
(i.e., $\frac{0.5}{2}$ + 0.5 = 0.75).

Assumes that each new family will require one housing unit.

The permanent character of the population would cause a shift in housing preferences. Many of the new permanent workers and families would occupy mobile homes; however, there would be a demand for detached single-family houses, and perhaps for duplexes and condominiums. The demand for permanent housing probably would be more concentrated in the closer communities (i.e., Arkansas City and McGehee), since permanent employees would prefer to live reasonably near their jobs.

For in-migrants to the Cypress Bend area, mobile homes are the main available housing type. However, there is some single-family and permanent low-income housing construction activity. Some 20 to 30 single-family homes are under construction at Dumas, where a local $10 million bond issue has been sold to permit home loans at 8.5 percent interest (Peterson 1980).

Public Services. Local public services would have to meet new demands by in-migrant permanent population. With one exception, the water and sewer services in the four communities surveyed now have or soon will have excess capacity available to meet increased demands. The exception is the Arkansas City water system, which currently serves 300 customers and would have to be expanded to accommodate a significant increase in demand.

Public schools in Arkansas City, McGehee, Dermott, and Dumas presently have capacity for additional students. All four school districts are in good fiscal condition and have ongoing capital-improvement programs. No problems are expected from increased enrollments.

Property Tax Revenues. Local fiscal conditions in Desha County and the Arkansas City School District have been improved considerably by the revenues from the new Potlatch paper mill. Arkansas City has just

built a new fire station, and the school district is going to build a new high school. Table 5L-11 estimates the ETSI assessed value and property tax revenue that will accrue to Lincoln and Desha counties, and compares them with 1976-77 property tax revenues.

Abandonment

Upon abandonment, the operation and maintenance employment at the site would be eliminated. There would be some short-term "construction" employment during demolition.

Property tax revenues, already reduced by depreciation of the capital improvements, would decline further. Assessed value would equal salvage value of the remaining improvements plus the value of the land.

CUMULATIVE EFFECTS

Three projects are proposed for construction in the area in the near future (these are unrelated to the ETSI Cypress Bend facilities):

- Expansion of the Potlatch paper mill, about 10 miles from Cypress Bend
- Construction of a grain elevator, 8 miles east of Dumas on the Arkansas River
- Construction of the proposed Yellow Bend Port, 3 miles south of Arkansas City at Yellow Bend

Of the known proposed projects in the area, only the expansion of the Potlatch paper mill would have a construction work force large

TABLE 5L-11

ESTIMATE OF ETSI PROPERTY TAXES AND COMPARISON WITH EXISTING COUNTY PROPERTY TAXES 1976-1977, LINCOLN AND DESHA COUNTIES, ARKANSAS

County	Estimated ETSI Property Tax[1] (1980 Dollars)			County Local Property Tax[2] 1976/1977 (1977 dollars)		Evaluation of ETSI[3] Revenues			
	Assessed Valuation of ETSI Components (X $1000)	Tax Factor (percent)	ETSI Revenues (X $1000)	Assessed Valuation Subject to tax (X $1000)	Property Tax Revenues	ETSI Assessed Valuation plus 1976/1977 Assessed Valuation (1 + 4) (X $1000)	ETSI Assessed Valuation as a % of 1976/77 Assessed Valuation (1 - 4) (X $1000)	Sum ETSI Revenues and 1976/77 Revenues (3 + 5) (X $1000)	ETSI Revenues as a % of 1976/1977 Revenues (3 - 5) (X $1000)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Lincoln	16,400	1.24	203	17,413	964	33,816	94	1,167	21
Desha	13,500	1.20	162	33,241	2233	46,743	41	2,395	7

[1]ETSI 1980. Assessed value and property taxes were estimated by ETSI by county for the EIS by extrapolating previously developed unit cost estimates for components and should in no way be construed as representing the cost estimate for the components. Values shown on this table were derived by ETSI as follows:

Sum of estimated cost of components in county x statewide ratio of assessed value to market value = assessed valuation of ETSI components x property tax rate (percent) assumed for county = estimated ETSI property taxes (in 1980 dollars)

[2]U.S. Bureau of the Census, 1977 Census of Governments.

[3]Column 6 is the sum of estimated ETSI Assessed Valuation (AV) as of 1980 and the 11976-77 total county assessed valuation (i.e., column 6 = column 1 + column 4)

Column 7 is the ratio of the ETSI AV to the 1976-77 total county AV expressed as a percent (i.e., column 7 = column 1 divided by column 4).

Column 8 is the sum of the estimated ETSI property tax revenues and the 1976-77 total county property tax revenues (i.e., column 8 = column 3 plus column 5).

Column 9 is the ratio of the estimated ETSI revenues to the 1976-77 total county property tax revenues expressed as a percent (i.e., column 9 = column 3 divided by column 5).

enough to create cumulative social and economic effects if it were constructed at the same time as the ETSI Cypress Bend facilities. The feasibility study for the Yellow Bend Port has been accepted, and construction will take place in 1983 and 1984. Some 25 workers are expected to construct the port and an adjacent 400-acre industrial park site. The schedule and work force for construction of the grain elevator is not known at this time, but the work force is not expected to be very large (Birchfield 1980).

Potlatch plans to double the capacity of its paper mill in five to ten years (1985 to 1990). It is not publicly known when construction will start. While no figures on construction employment have been released, the construction work force may reach 1000 (Gressette 1980; Frisby 1980; Jackson 1980).

On the basis of what is known about the proposed construction schedule for ETSI (1983-1984) and the Potlatch paper mill expansion (1985-1990), it appears unlikely that the two projects would be constructed at the same time. Although the Potlatch and the ETSI construction projects each would create an in-migration of nonlocal workers and families, this in-migration would not be great enough to cause much more than a shortage of housing. However, if the two projects were constructed simultaneously, the combined construction work force in the area could reach 1200, significantly increasing the potential for adverse social and economic effects in the area.

SOCIOECONOMIC IMPACT SUMMARY: AREA 18 - CYPRESS BEND
Alternatives: Valid for pipeline-barge alternative only.

Baseline Conditions

Rural southeastern Arkansas is low in population. There is an available construction labor force of 964 in the five-county area. Communities within 40 miles of Cypress Bend--especially Arkansas City, McGehee, Dermott, and Dumas--have low housing-vacancy rates, but several mobile home parks have over 100 available spaces. Water and sewer systems and school districts can absorb additional demand. Paper mill construction (1000 peak work force) was completed in 1977. Thus there has been recent local experience with construction in-migration.

Project Components and Activities

- Cypress Bend lateral pipeline (32-inch O.D.): work force 390 in third quarter of 1984
- Cypress Bend dewatering plant (18.9 MMTA), steam plant, barge terminal: main construction 1983-1984; peak work force 715 in first quarter of 1984

Social and Economic Effects

(Changes in local conditions due to ETSI, and significance)

Construction. In-migration of 608 nonlocal construction workers and families would cause an estimated peak demand for 550 housing units. This significant temporary housing demand could be best met by mobile homes. There is significant short-term (one quarter) additional demand for 165 temporary housing units for pipeline construction workers.

Operation. Creation of 167 direct jobs. Estimated generation of 184 secondary jobs. The estimated areawide population increase of 780 persons constitutes less than 1 percent of the 1975 five-county population. 280 single-family homes would be needed. Some public service expansion would be necessary (e.g., Arkansas City water system).

Abandonment. Loss of direct and secondary employment; reduction of property tax revenues.

Cumulative Effects

No significant cumulative effects, unless the Potlatch paper mill expansion (proposed for 1985-1990) and the ETSI construction (proposed 1983-1984) were to overlap.

SOCIOECONOMIC IMPACT SUMMARY TABLE CYPRESS BEND, ARKANSAS, AREA (Alternatives: pipeline-barge only)

Alternatives: Pipeline/Barge only

Social/Economic Indicator		Baseline Conditions	Construction		Operation			
EMPLOYMENT		964 (1977) 5-County area	Fixed-site local nonlocal Mobile local	715 107 608 390 195	Direct: 167 jobs Secondary: 184 jobs Total - 351			
POPULATION		(1975)						
	Desha	18,005						
	Chicot	17,953						
	Drew	17,190	Fixed-site	1593	1.7% of 1975 5-county pop.	780 persons	0.8% of 1975 5-county	
	Lincoln	13,310						
	Ashley	25,206						
5-County	Total	91,664	Mobile	360				
HOUSING		Housing Units	Motel Units	Nonlocal Fixed-site 547	10% of stock in 4 communities	280 units	5 percent of inventory in 4 communities	
	Arkansas City	465	0					
	McGehee	1950	125					
	Dermott	1270	50	Pipeliners	165	75% of available supply in 4 communities		
	Dumas	2085	98					
	Total	5770	223					
Public Services school water sewer						Arkansas City might have to expand water system		
PROPERTY TAX BASE AND REVENUES	1976-77 Assessed Valuation X $1000	Property tax Revenues X $1000			Significant positive tax revenue benefits to Lincoln an Desha counties, Arkansas			
	17,413	964						
	33,241	2233						

CHAPTER SIX
COAL SLURRY PIPELINES AND PUMP STATIONS

The affected environment for some sections of the mainline and pump stations have already been presented in terms of their coinciding with areas potentially affected by other project components. But even beyond those areas already discussed is another set of jurisdictions subject to social or economic effects: areas potentially affected solely by construction or operation of the mainline and associated pump stations.

Therefore, the following discussion focuses solely on the effects of construction from four pipeline segments: all of spread II, and portions of spreads I, III, and V. A crew of about 750 would be required on spreads I, II, and III, and 260 would be required on the southern segment of spread V. Work on the pipeline would potentially affect a given area for no more than 4 months—in most cases for only 2 to 3 months. For those segments in which a pump station would also be located, an additional crew of 50 persons would be required for about 24 months.

Anticipated Effects

Potential effects from pipeline construction are quite different from those associated with long-term, fixed-site construction projects. Pipeline crews move rapidly in areas through which the right-of-way (ROW) extends. The (ROW) clearing crew may be working as much as 25 miles ahead of the trenching and pipe-laying crews, and as much as 40 miles ahead of the clean-up crew. Associated effects, therefore, are spread along a series of communities in proximity to the (ROW) at any one time.

Given the quick pace, short duration, and geographically linear spacing of pipeline and pump station construction, the potential impact topics are minimal, and the level of expected adverse effects is low. Similarly, the extent, magnitude, and types of effects to assess would be different from other project types.

Typically, few crew members are not accompanied by other persons, due to the fast pace and the relatively short duration of projects and the movement of crew tasks. Typically the construction work week is six days a week, involving 10-12 hours per day. In these circumstances, crew members rarely would bring families, especially those having school-aged children. As a result, no increase in local secondary employment would be expected.

Affected Areas

The environment potentially affected by only the pipeline and pump stations was identified as being: (1) all host counties (i.e., counties containing project components), and (2) selected communities within one and a half hours drive of a project component. These two elements comprise the affected environment, based on one or more of the following potential impact types to which the affected environment may be subjected.

- Short-term impacts due to increased demand for incidental services (e.g., lodging, food, fuel).

- Short-term impacts through increasing sources of social interaction. Annoyance may result from increases in dust, or traffic congestion. New sources for social interaction create a welcomed sense of social excitement.

- Long-term beneficial impacts through increases in tax revenues from project-related property taxes may accrue to host counties.

The size of each host county is shown in Table 6-1 in terms of population and recent tax revenues. Selected communities within one and a half hours drive of the project components are listed in Table 6-2.

The following two assumptions were used as the basis for selecting communities as a part of the affected environment:

- Seekers of services would locate where services exist; i.e., construction workers would travel further in order to secure services rather than live uncomfortably but located closer to the job.

TABLE 6-1

COUNTIES IN AREAS OUTSIDE WYOMING POTENTIALLY AFFECTED BY MAIN SLURRY PIPELINE AND PUMP STATIONS: PROPOSED ACTION

County/Parish	Pump Station[a]	1975 Population[b]	Fiscal Year 1976-77 Tax Revenues[c] ($000)
Nebraska			
Sioux		2,000	611
Box Butte		12,400	3,557
Morrill		6,100	2,296
Garden	P-4	2,900	1,571
Deuel		2,400	1,410
Keith		10,100	4,134
Perkins		3,500	2,022
Chase		4,800	2,743
Hayes		1,500	648
Hitchcock		4,000	2,201
Red Willow	P-5	12,800	4,602
Kansas			
Decatur	P-6	5,100	2,192
Norton		6,700	2,452
Graham		4,400	2,145
Trego		4,400	1,608
Ellis		27,400	6,902
Rush		4,800	2,566
Barton		31,600	9,368
Stafford	P-7	6,200	3,100
Reno		63,700	18,236
Kingman		8,900	3,834
Harper		7,900	3,382
Sumner		24,500	7,213

[a] Pump station designations are explained in Appendix A.

[b] U.S. Bureau of the Census 1978.

[c] U.S. Bureau of the Census 1979b.

TABLE 6-1 Concluded

County/Parish	Pump Station[a]	1975 Population[b]	Fiscal Year 1976-77 Tax Revenues[c] ($000)
Oklahoma			
Sequoyah		28,600	1,290
Arkansas			
Crawford	P-11	33,400	2,277
Franklin		13,700	1,270
Johnson		17,100	1,220
Pope	PMB-12, PMB(I)-1	36,100	7,490
Conway		18,600	1,614
Van Buren	PMB(I)-2	11,800	892
Cleburne		15,800	1,462
Perry		7,400	556
Cleveland		6,900	476
Bradley	PM-14	12,700	1,089
Ashley		26,400	2,830
Louisiana			
Morehouse		33,700	3,496
Ouachita	PM-15	130,700	13,354
Caldwell		10,200	1,374
La Salle	PM-16	15,200	1,976

[a] Pump station designations explained in Appendix A.

[b] U.S. Bureau of the Census 1978.

[c] U.S. Bureau of the Census 1979b.

TABLE 6-2

SELECTED COMMUNITIES IN AREAS OUTSIDE WYOMING POTENTIALLY AFFECTED BY MAIN SLURRY PIPELINE AND PUMP STATIONS: PROPOSED ACTION

Pipeline Spread[a]	Community/State	1976 Population[b]
I	Torrington, WY	4,667
I	Scottsbluff, NE	12,665
I	Alliance, NE	6,990
I	Sidney, NE	6,150
I	Ogallala, NE	5,442
I	North Platte, NE	21,882
I and II	McCook, NE	8,455
II	Hays, KS	16,544
II	Great Bend, KS	16,098
II	Larned, KS	4,827
II	Hutchinson, KS	40,925
II	Pratt, KS	6,661
II	Kingman, KS	3,850
II	Wichita, KS	264,901
II	Wellington, KS	7,653
II	Ponca City, OK	25,819
III	Ft. Smith, AR	64,734
III and V	Russellville, AR	13,790
V	Morrilton, AR	6,630
V	Little Rock, AR	141,143
V	Warren, AR	6,139
V	Crossett, AR	6,290
V	Bastrop, LA	14,266
V	Monroe, LA	61,016

[a] See Table 1-6 for pipeline spread responsibilities.

[b] U.S. Bureau of the Census 1978.

- Construction workers have been known to commute over 100 miles per day to a construction site (Old West Regional Commission 1975). Therefore, an estimated drive of one and a half hours to the site was used.

Use of these communities for services (all within a one and a half hour drive of construction areas) would not mean that services would not be sought in other communities--even in some smaller communities closer to construction areas. Rather, it is expected that nearby communities would provide services to the extent that they could. Those larger, and in some cases more distant, communities would meet the residual demand for services.

Impact Analysis

The counties, parishes, and selected communities in the affected area were examined in terms of their capacities to provide needed services for the short-term, and in terms of the extent of potential beneficial effects over the period of project operation. Details of specific demands and capacities are provided in the study area profiles in the appendix. In no instance was the level of anticipated effect to the affected environment determined to represent an adverse impact of significant proportions. Specifically, changes in employment, population, and short-term housing demand were not expected to cause significant impact.

Construction

Given the extent, duration, and magnitude of expected effects, and given the existing capacities in the host counties and selected communities, no system strain is anticipated to occur for any given community within the affected environment. Given the short duration of pipeline construction (in any one area) and the minor population and income increases associated with pump station construction (about 35 employees new to the area), no short-term beneficial effects were determined to be of a significant magnitude.

Estimated Employment and Population Effects from Pipeline Construction

The following assumptions and calculations were used to estimate pipeline construction effects on employment, population, and demand for local housing

by nonlocal pipeline construction workers. The factors are shown on Figure 6-1 and the resultant estimates are shown on Table 6-3.

Direct Employment. Pipeline spread size and segment responsibilities were provided by ETSI. Coal slurry pipeline construction would be done by six pipeline construction spreads working in the last quarter of 1983 and all four quarters of 1984. Total main-line construction employment would be a maximum of approximately 2540 workers in the third quarter of 1984. Total manpower on each spread would vary with the pipe diameter and the difficulty of the terrain (Table 6-3).

Mix of Local and Nonlocal Workers. Construction of the coal slurry pipeline system would employ some local workers for construction of both the coal slurry pipeline and the pump stations.

Because of the strong demand for construction workers on the many mining and power plant projects in the Wyoming area, it has been assumed that 100 percent of the pipeline spread crews would be hired from outside the area.

In Nebraska (spread I) it was assumed that 25 percent of the pipeline workers would be hired locally and 75 percent would be hired from outside the area. For pipeline construction, the only workers routinely hired locally are laborers and teamsters who generally constitute about 25 percent of a spread work force.

For spreads III, V, and VI in Kansas, Oklahoma, Arkansas, and Louisiana, it was assumed that 50 percent of the workers on a spread would be hired locally and 50 percent would be nonlocal and move into the area only temporarily.

Justification for this assumption derives from the high density of existing pipelines in these states and the availability of more specialized pipeline construction workers from local labor pools.

Total mobile population. The following factors were adopted from a survey of pipeline construction workers cited in Environmental Statement Crude Oil

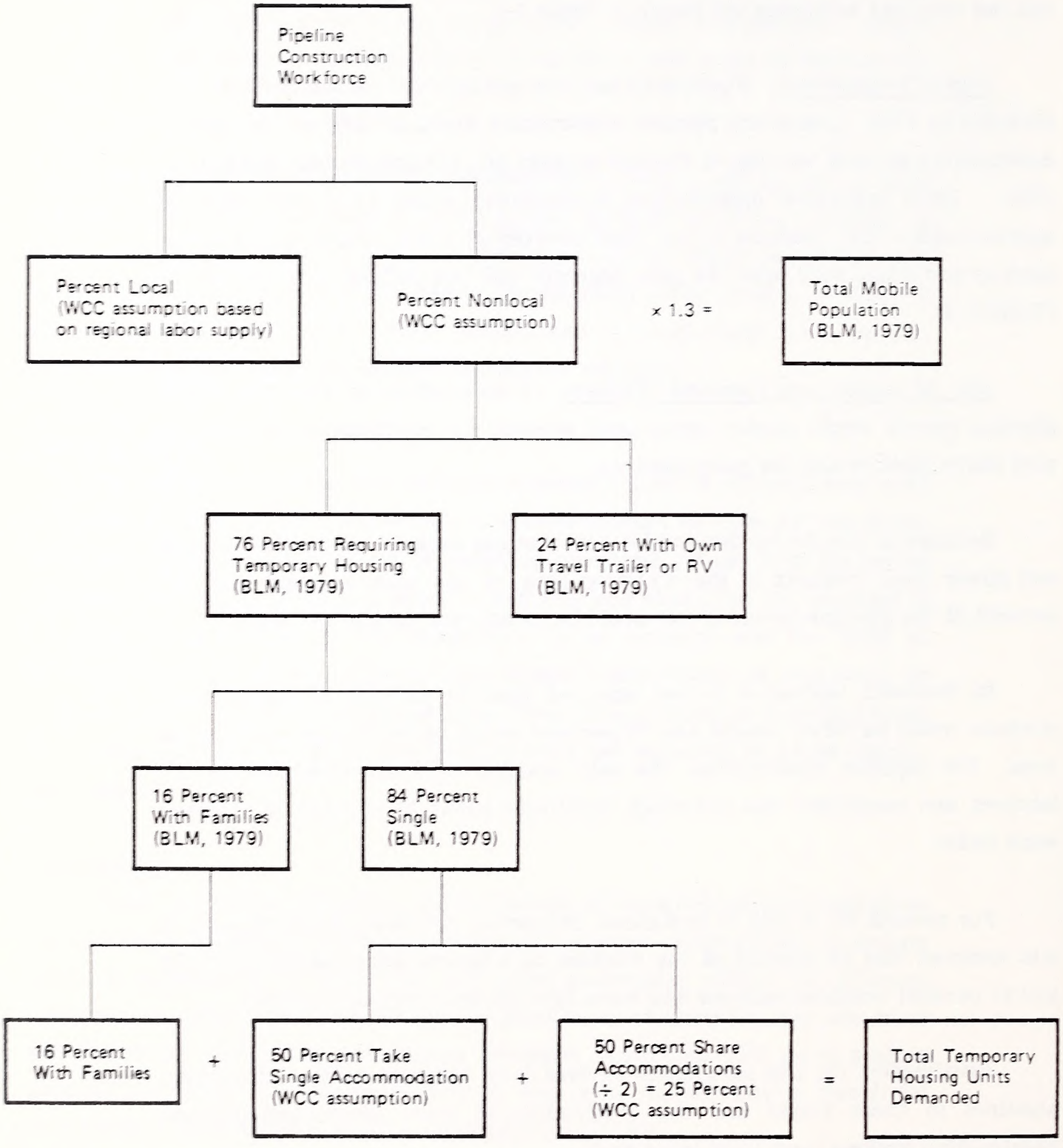
Pipeline Construction Workforce
Percent Local (WCC assumption based on regional labor supply)
Percent Nonlocal (WCC assumption)
× 1.3 =
Total Mobile Population (BLM, 1979)
76 Percent Requiring Temporary Housing (BLM, 1979)
24 Percent With Own Travel Trailer or RV (BLM, 1979)
16 Percent With Families (BLM, 1979)
84 Percent Single (BLM, 1979)
16 Percent With Families
+
50 Percent Take Single Accommodation (WCC assumption)
+
50 Percent Share Accommodations (÷ 2) = 25 Percent (WCC assumption)
=
Total Temporary Housing Units Demanded

Figure 6-1. FACTORS AND CALCULATIONS USED TO ESTIMATE PIPELINE CONSTRUCTION EFFECTS

TABLE 6-3

MAIN SLURRY PIPELINE CONSTRUCTION WORKERS, LOCAL/NONLOCAL EMPLOYMENT MIX, NONLOCAL POPULATION AND HOUSING DEMANDS

Spread Segment		Employment				Population	Housing						
		Typical[a] Work Force (rough terrain)	Ratio[b] Local/ Nonlocal	Local	Non-local	Transient[c] Nonlocal Population (1.3 times nonlocal workers)	Transient[c] Workers with Own Mobile Quarters (24% of nonlocal workers)	Transient Workers Seeking Temporary Quarters			Demand for Transient Housing Units		
								Total[c] (76% of nonlocal workers)	Singles[c] (84%)	with Families[c] (16%)	From[d] Single Workers (assumes 1/2 share accommodations) (singles x .75)	From Workers with Families (assumes 1 unit each fam.)	Total (Rounded)
I	Jacobs Ranch to Milepost 390	670 (748)	25/75	167 (186)	503 (562)	654 (731)	121 (135)	382 (427)	320 (359)	61 (68)	240 (269)	61 (68)	300 (335)
II	Milepost 390 to Pryor	670 (748)	50/50	335 (374)	335 (374)	436 (486)	80 (89)	255 (284)	214 (239)	41 (46)	160 (180)	41 (46)	200 (225)
III	Pryor to Muskogee	670 (748)	50/50	335 (374)	335 (374)	436 (486)	80 (89)	255 (284)	214 (239)	41 (46)	160 (180)	41 (46)	200 (225)
III	Muskogee to Atkins Jct.	610 (688)	50/50	305 (344)	305 (344)	397 (447)	73 (83)	232 (261)	195 (220)	37 (42)	146 (165)	37 (42)	180 (205)
V	Atkins Jct. to Alexandria Jct.	550 (615)	50/50	275 (307)	275 (307)	358 (399)	66 (74)	209 (233)	176 (196)	33 (37)	132 (147)	33 (37)	165 (185)
V	Atkins Jct. to Independence	260	50/50	130	130	169	31	99	83	16	62	16	80
VI	Alexandria Jct. to New Roads	390	50/50	195	195	254	47	148	124	24	93	24	115
VI	Alexandria Jct. to Boyce	260	50/50	130	130	169	31	99	83	16	62	16	80
	Alexandria Junction to Lake Charles												
	New Roads to Wilton												

[a]Spread size estimates as provided by ETSI 1980.

[b]Assumptions by author explained in text.

[c]Factor from BLM 1979, p. 3-126.

[d]Assumption by author explained in text.

Transportation Systems (BLM 1979. Vol. 1, p. 3-126). The study revealed that in the group sampled the total mobile population was 1.3 times the number of nonlocal pipeline workers. This value has been used in calculations made in this study since the project involves a similar type of work force.

Demand for Temporary Housing. The survey of pipeline workers showed that 24.4 percent of the nonlocal workers sampled lived in their own travel trailer or recreational vehicle (RV). Therefore, it was assumed that 24 percent of the pipeliners would live in their own mobile quarters and the other 76 percent would require some kind of temporary housing along the pipeline route. The demand for temporary housing was estimated as follows:

- Sixteen percent (of the 76 percent without their own mobile quarters) were assumed to be accompanied by their families (per BLM 1979, Vol. 1, p. 3-126) and each family unit would require one housing unit.

- Eighty-four percent of the nonlocal pipeliners without their own mobile housing were assumed to be single (per BLM 1979, Vol. 1., p. 3-126).

- It was further assumed for the purpose of this study that half of the single nonlocal pipeliners would share accommodations with another single nonlocal pipeliner. Therefore, the demand for temporary housing units by single nonlocals is assumed to be 75 percent of the single nonlocals.

- The total demand for temporary housing units by nonlocal pipeline construction workers and their families would then be the sum of the units demanded by the pipeliners traveling with their families plus the units demanded by single and unaccompanied workers.

Operation

Pump stations would be automated. The operation and maintenance work force requirements for the pipeline system are small and personnel would be based at preparation and dewatering plants. Consequently, no noticeable effects

would be associated with work force requirements in counties with pipelines and pump stations only.

Beneficial effects would be associated with increased assessed valuation and property tax revenues to counties and parishes. The amount of revenue is a function of the value of pipeline components to be located in a given county jurisdiction and the particular means by which a given state and county calculates its taxes on pipeline and pump station properties. The degree of benefit would depend upon the value of the system in the county, the existing tax base, and local decisions on how to incorporate the new source of property tax revenues into the county tax structure.

Assessed Value and Property taxes by county were estimated by ETSI for the EIS by extrapolating previously developed unit cost estimates for components and should in no way be construed as representing the cost estimate for the components. Values shown on the tables were derived by ETSI as follows: Sum of estimated cost of components in county (1980 dollars) x statewide ratio of assessed value to market value x percentage tax rate assumed for county = estimated ETSI annual property taxes in 1980 dollars.

The same property tax estimate calculations were made for all counties in which project components would be located. Given the increase in assessed valuation from the ETSI project a county would have several options:

- Maintain the same property tax rate and collect increased property tax revenues.

- Change (lower) the property tax rate and maintain approximately the same level of property tax revenues.

- Shift the tax structure to rely less on the personal property tax in those counties that previously relied on it due to a minimum of taxable real property.

CHAPTER SEVEN

OAHE ALTERNATIVE WATER SUPPLY SYSTEM
AFFECTED AREA: WESTERN SOUTH DAKOTA

LOCAL STUDY AREA

The Oahe alternative water supply system would require a 276-mile water pipeline from the Oahe Reservoir, near Pierre, South Dakota, to Gillette, Wyoming. The water pipeline route is shown on strip maps A55 to A59 in Appendix A of the ETSI coal slurry pipeline EIS (BLM 1980). It would pass through five counties in South Dakota (Stanley, Haakon, Pennington, Meade, and Lawrence) and two counties in Wyoming (Crook, and Campbell).

BASELINE CONDITIONS

Population and Employment

Population for the seven potentially affected counties is shown in Table 7-1. Since Pierre, the principal city near Oahe Reservoir, is situated in Hughes County, data also are provided for that county. There are several small communities along the 275-mile route (Table 7-2), as well as three principal service towns: Pierre, Rapid City, and Gillette. These three service towns are likely to be construction spread headquarters.

Employment in six South Dakota counties shows that the Rapid City area is the largest source of construction workers for construction of the water pipeline in South Dakota (Table 7-3). In 1977, about 1953 persons were employed in construction in Pennington County, and another 165 were employed in construction in Meade County, the two counties that make up the Rapid City SMSA.

TABLE 7-1

Populations of Counties and Communities
Along the Oahe Reservoir-Gillette Water Pipeline Route

County	Community	Census 1970 Population	1975 Population	Population Change 1970-1975 (percent)
SOUTH DAKOTA				
Hughes		11,632	13,268	16.3
	Pierre		11,444('75)	
Stanley		2,457	2,520	3.3
	Ft. Pierre		1,800('79)	
Haakon		2,802	2,809	0.2
	Phillip		1,000('79)	
Pennington		59,349	65,918	13.5
	Wall		820('70)	
	Wasta		120('79)	
	New Underwood		519('79)	
	Box Elder		867('79)	
	Rapid City		43,875('79)	
Mead		17,020	18,291	7.6
	Sturgis			
Lawrence		17,453	17,005	-4.1
	Whitewood		875	
WYOMING	6-Co. Total		119,811	
Crook		4,535	4,883	7.2
	Sundance		2,500	
	Moorcroft		1,150	1.0
Campbell		12,957	13,090	1.0
	Gillette		13,000	

Sources: US Bureau of the Census 1978 and South Dakota Dept. of Economic Development and Tourism 1980.

TABLE 7-2

EMPLOYMENT IN SOUTH DAKOTA COUNTIES

County	Total Employment 1979	Construction 1977
Hughes	8,344	394
Stanley	1,096	76
Haakon	1,524	21
Pennington	37,265	1,953
Meade	5,265	165
Lawrence	7,795	301

Source: U.S. Department of Commerce, Bureau of Economic Analysis, April 1979; Regional Economic Information System, Table 25.00, "Employment by Type and Broad Industries Sources, 1972-1977."

TABLE 7-3

TEMPORARY HOUSING AVAILABILITY, 1980:
LIKELY PIPELINE CONSTRUCTION SPREAD HEADQUARTERS -
OAHE ALTERNATIVE WATER SUPPLY SYSTEM

Community	Number of Hotel/Motel Rooms	Hotel/Motel Construction	Number of Rental Units Apts./Homes	Rental Vacancy Rate	Number of Rental Units Planned or Under Construction	Number of Mobile Home Parks	Number of R.V. Parks	Number of Mobile Home Spaces, Vacant, Planned, or Under Construction
Gillette, Wyo.	560	60	815	5%	252	1391 units	n.a.	471
Pierre, S. Dak.	711[a]	Hotel complex in Ft. Pierre in planning stages	n.a.	Low	31	6 parks-300 spaces; few mobile homes avail. for rent	none	None under construction
Rapid City, S. Dak.	3140[b]	Motel 6/150; Prime Rate Inn/140	n.a.	10-15%	A few small units	25 parks/ 1161 spaces	n.a.	Quite a few vacancies and rentals (fall through spring, higher availability

Source: Phone conversations with local chambers of commerce, building inspectors, and realtors, June 25, 1980.

[a] Pierre Area Chamber of Commerce, 1979, "Pierre South Dakota Civic Info."

[b] Sixth District Council of Local Governments, 1978 South Dakota Community Data, Rapid City, Pennington County, published by Montana-Dakota Utilities Co.

n.a. = not available

The existing socioeconomic conditions in the Gillette area are described in a preceding section of this report.

Housing

For construction workers who would move in from outside the area to construct the water pipeline (assume as many as three-quarters of those to be employed), Pierre, Rapid City, and Gillette would be preferred for temporary housing. Availability of temporary housing in these communities is shown in Table 7-4, as an indication of what is available in all communities along the Oahe pipeline route.

Public Services

Construction of the Oahe alternative water supply system would have no significant effect on local public services and facilities. Therefore no data on existing conditions are presented.

PROJECT COMPONENTS

Components of Oahe Reservoir-Gillette alternative water supply system are:

- 276-mile 18-inch water pipeline with 8 pump stations
- In addition, provision would be made for construction of laterals to 15 or more communities along the route.

TABLE 7-4

ESTIMATED EMPLOYMENT AND POPULATION INCREASES DURING CONSTRUCTION OF THE OAHE ALTERNATIVE WATER SUPPLY SYSTEM

			S. Dak. Segment	Wyoming Segment
DIRECT EMPLOYMENT: Peak Construction Work Force			260	260
Times assumed percentage nonlocal	75%,	100%		
Equals nonlocal direct construction employment			195	260
Assumed percentage local	25%,	0%		
(Assignment of these percentages based upon review of labor force availability and experience with other construction projects)				
SECONDARY EMPLOYMENT	195			
Nonlocal direct construction employment	260,			
Times nonlocal secondary employment multiplier (0.6) (HUD 1976, p. 5)				
Equals secondary employment			117	156
Assumed percentage nonlocal	100%			
Assumed percentage local	0%			
(Assignment based on review of labor force)				
Total Employment			312	416
POPULATION				
Nonlocal direct construction employment	312, 416			
Times percentage single	40%	= 125, 166	125	166
Times percentage married with family	60%	= 187, 250		
Times family size (ratio of single vs. family, with and average family size from HUD 1976, p.5)	3.7	=	693	924
Nonlocal indirect employment	117, 156			
Times percentage single	50%	=	56	78
Times percentage married with family	50%			
Times family size (ratio from HUD 1976, p. 5)	3.7	=	215	289
TOTAL New nonlocal population			1092	1457

PROJECT IMPACT ON WESTERN SOUTH DAKOTA STUDY AREA

Construction

Schedule and Personnel. A single spread of 260 pipeline construction workers would be required to construct the water line. Construction would take 2 years (January 1983 to December 1984).

It is assumed that approximately 75 percent of the construction work force would be nonlocal. The other 25 percent of the construction work force would be available from the Pierre and Rapid City labor markets. Only on the Wyoming segment of the water line, do existing and projected conditions suggest that construction of this pipeline, in combination with other concurrent projects, might require that up to 100 percent of the construction work force be imported from outside the region.

Employment and Population: Changes Caused by ETSI. Due to the rapid movement of pipeline construction activity the construction crew would be present in any one area for only 2 to 4 months and no significant secondary employment effects are expected. With a work force of 260 persons (195 of them nonlocal) the total mobile population is estimated to be 254 persons (Table 7-5).

Housing. Construction of the Oahe water supply system would have no significant effect on local housing conditions. Some of the mobile construction workers on the Oahe pipeline would require temporary housing in communities along the route. The pipeline alignment is roughly parallel to US Interstate 90, a heavily traveled east-west route. Numerous

TABLE 7-5. OAHE WATER SUPPLY PIPELINE WORKERS, LOCAL/NONLOCAL EMPLOYMENT MIX, NONLOCAL POPULATION AND HOUSING DEMANDS

Spread Segment	Employment				Population	Housing						
	Typical Work Force	Ratio Local/ Nonlocal	Local	Non-local	Transient Population (1.3 times nonlocal workers)	Transient Workers with Own Mobile Quarters (24% of nonlocal workers)	Transient Workers Seeking Temporary Quarters			Demand for Transient Housing Units		
							Total (24% of nonlocal workers)	Singles (84% of 76%)	Families (16% of 76%)	From Single Workers (assumes 1/2 share accommo-dations) (% singles .75)	From Workers with Families (assumes 1 unit each fam.)	Total Rounded
Oahe to Gillette-S. Dak.	260	-	25/75	65	195	254	47	148	124	24	93	24	115
- Wyoming	260	-	0/100	0	260	338	62	198	166	32	63	32	95

See Discussion and Table 6-3 in Chapter 6 for assumptions and calculations used to generate this table.

adequate motel accommodations are available in Pierre, Wall, Rapid City, Spearfish, and other smaller communities in South Dakota. Since the contractor most likely would establish its temporary spread headquarters in Pierre, Rapid City, and Gillette. Transient construction workers would find the greatest number of accommodations in these three communities, but would seek out and find temporary housing in nearly all the communities along the pipeline route.

In Wyoming, temporary quarters for transient pipeline construction workers might be more difficult to find. Under the Oahe alternative, the socioeconomic impacts on Gillette would not significantly differ from the impacts under the proposed action. Elimination of the Niobrara well field from the project would reduce slightly the level of construction period impacts on Lusk.

Public Services. Construction of the Oahe alternative water supply system would have no significant effects on public services on South Dakota or Wyoming communities.

Operation

Employment and Population: Changes Caused by ETSI. Operation of the Oahe Reservoir water pipeline would employ 12 persons. Pump stations would be automated and require no permanent operations personnel. No significant secondary employment would be created in the communities along the route (Table 7-6).

Housing. Permanent new employment related to the Oahe water pipeline would be dispersed and minor. Consequently, there would be no adverse effects on housing market conditions.

TABLE 7-6

ESTIMATED EMPLOYMENT AND POPULATION INCREASES DURING OPERATION OF THE OAHE WATER SUPPLY PIPELINE

EMPLOYMENT	
Direct Operation and Maintenance Employment	12
Assume 100 percent nonlocal as a worst case	
Secondary Employment	
Nonlocal direct employment (12) x secondary employment multiplier[1] (1.1) = secondary employment	13
Nonlocal Secondary Employment	
Secondary employment (13) x assumed percentage nonlocal[2] (80%) = nonlocal secondary employment (10)	
Total Employment	25
POPULATION	
Nonlocal direct employment (12) x percent single[3] (40%) = nonlocal direct singles	5
Nonlocal direct employment (12) x percent with families (60%) = (7) x average family size[3] (3.7) = nonlocal secondary singles	27
Nonlocal secondary employment (10) x percent single (50%) = nonlocal secondary singles	5
Nonlocal secondary employment (10) x percent with families (50%) x average family size (3.7) = nonlocal secondary with family members	19
Total New Population	56

[1]Secondary employment multiplier adopted from HUD 1976, p. 5.

[2]Mix of locals and nonlocals taking secondary employment adopted from HUD 1976, p. 5.

[3]Percent single, percent with families and family size factors adopted from HUD, 1976, p. 5.

Public Services. The water pipeline would pass through five counties in South Dakota (Stanley, Haakon, Pennington, Meade, and Lawrence) and two counties in Wyoming (Crook and Campbell). New demands on public services would be minimal.

Property Tax Revenues. Property taxes would be paid in each of these counties.

Abandonment

Should the project be abandoned at the end of the 50-year project period, the 12 permanent jobs would be eliminated. Property tax revenues, already reduced by depreciation of the facility, would decline further.

Assuming that lateral lines were built to communities in South Dakota and that the project was abandoned by ETSI, the loss of water availability probably would have significant impacts on those communities. However, the lateral lines and associated impacts are not part of this project.

CUMULATIVE EFFECTS

The proposed ETSI water line from Oahe Reservoir would include provision for construction of laterals to 15 or more communities in South Dakota along the 280-mile pipeline route. Therefore, the communities and farmers who would get the increased water supply would be getting significant side benefits. While ETSI participation might make the proposed water lines available to these communities and farmland, the 19 lateral lines are not considered a part of the ETSI project. Environmental assessment, including assessment of socioeconomic effects, would be considered in studies prepared by the participating communities or water agencies.

SOCIOECONOMIC IMPACT SUMMARY OAHE-GILLETTE PIPELINE

EXISTING CONDITIONS

Oahe alternative water supply system would require a 280-mile water pipeline from Oahe Reservoir, near Pierre, South Dakota, to Gillette, Wyoming. With the exception of Pierre and Gillette, the route would be through a generally rural area, although it would roughly parallel Interstate 90.

PROJECT COMPONENTS AND ACTIVITIES

- 276-mile water pipeline
- 8 Pump stations

Social and Economic Effects

(Changes in local conditions due to ETSI, and significance)

Construction

260 peak work force: 100 percent nonlocal in Wyoming, 75 percent nonlocal in South Dakota.

Operation

Water pipeline operation would employ 12 persons. Pump stations would be automated and require no permanent operations personnel.

Abandonment

Loss of employment; loss of property tax revenues. Most significant impact not part of this project - for example, if the laterals are used by communities for water supply and development purposes. Lateral lines would be considered in studies prepared by participating communities.

CUMULATIVE EFFECTS

Because the water pipeline includes provisions for the construction of laterals to 15 or more communities in South Dakota along the route, there would be significant side benefits to the communities and farmers who get an increased water supply.

WESTERN SOUTH DAKOTA STUDY AREA IMPACT SUMMARY - OAHE WATER SUPPLY ALTERNATIVE

Social/Economic Indicator	Baseline Conditions	Construction Impacts Number	Operation Impacts Number
Employment	Construction Employment 2,910 in 5-county area	Mobile Total 260 Nonlocal 195	Direct jobs 12 Secondary 13
Population	So. Dakota Hughes 13,262 Stanley 2,520 Haakon 2,809 Penning. 65,918 Meade 43,291 Lawrence 17,005 6 county Total 119,811 Wyo. 2 county Total 17,973	Total Mobile Population: 254	56 persons
Housing	Adequate motel housing along interstate 90	S. Dak.: 115 Wyo.: 95	Not Significant
Public Services	Not Significant	Not Significant	Not Significant
Property Tax Base and Revenues	Not Inventoried	Not Inventoried	Not Inventoried

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APPENDIX A-1

Methodology

The following represent the methodology used to calculate total employment (basic and nonbasic), housing demand, and population.

WORKERS--BASIC (CONSTRUCTION) AND NONBASIC

1.	Fixed Site Construction Workers (Assume Jacobs Ranch Preparation Plant) (Assume 100 % Nonlocal)	278
2.	Times Factor for Estimated Residential Location Pattern in GPA (Table 4-17)	x .4
	Sum Total Number of Construction Workers in GPA	111
3.	For 1st Quarter 1984	275
4.	Times Ratio of Nonbasic to Basic	x .4
5.	Equals Number of Nonbasic Workers in GPA (Assume 100 % Nonlocal)	110

HOUSEHOLDS--BASIC (CONSTRUCTION) AND NONBASIC

	Fixed-Site Construction Workers (from 3)	275
7.	Divide Number of Fixed-Site Construction Worker per Construction Worker HH	÷1.0
8.	Equals Number of Basic HH	275
	Nonbasic Workers in GPA (from 5)	110
9.	Divide 1.6 Nonbasic Workers per Nonbasic HH	÷1.6
10.	Equals Number Nonbasic HH	69

11.	Sum Basic HH plus Nonbasic HH (275 + 69)	= 344

POPULATION

	Total New to the Area	
	Basic Fixed-Site Employer (from line 3)	275
12.	Times Number of People per Fixed-Site Worker	x 2.28
13.	Equals Number of People Associated with Basic Workers	627
	Nonbasic Households (from line 10)	69
14.	Times Number of People per Nonbasic HH	x 2.5
15.	Equals Number of People Associated with Nonbasic HH	172
16.	Sum Basic Plus Nonbasic Population (line 13 + line 15)	799

APPENDIX A-2

Fiscal Impact Analysis

INCOME AND ASSESSED VALUE

Total personal income and assessed valuation for the county are projected to provide a basis for estimating sales and property taxes. The ETSI project would generate $45 million in additional personal income during the first two years of construction and $14 million annually (in constant 1979 dollars) during full operation (Table A2-1).

Campbell County's assessed valuation in 1979 was $596.2 million, the second highest of any county in Wyoming. This is substantially higher than its 304.6 million assessed valuation in 1976, and nearly five times more than its $125.3 million assessed valuation in 1970. The growth is due primarily to the increased value of mineral production, which now accounts for approximately three-fourths of the county's assessed valuation. Assessment of minerals in Wyoming is based on current market values, whereas other types of property are assessed on the basis of constant 1967 values.

Projected assessed valuations for Campbell County and Gillette are given in Table A2-2. The county's total assessed valuation is projected to reach $3.5 billion by 1990--an increase of 590 percent from 1979. Mineral production, primarily coal and oil, will account for nearly 90 percent of the assessed valuation. The assessed value of mineral production was estimated on the basis of projected production and projected assessed values per unit of production. These per-unit assessed values were estimated by taking 1979 per-unit assessed values as a base, and inflating them via the inflation rate implied in the state of Wyoming's official projection of mineral production and valuation (Wyoming Legislative Service Office 1979). The per-unit assessed valuation of coal production was adjusted downward in 1986 to reflect the higher federal royalties that will go into effect during the 1985 to 1987 time period. The assessed value of new industrial facilities and equipment was based on comparable facilities or historical ratios of assessed value to output, as appropriate.

The estimated direct assessed valuation accruing to Campbell County from the ETSI coal slurry pipeline system is given in Table A2-3. The Wyoming

TABLE A2-1
PROJECTED TOTAL PERSONAL INCOME BY
PLACE OF RESIDENCE — CAMPBELL COUNTY

Year	Personal Income		
	With ETSI	Without ETSI	Net Impact
	(Millions of Constant 1979 Dollars)		
1980	271	271	0
1981	302	302	0
1982	342	342	0
1983	368	343	25
1984	408	388	20
1985	418	409	9
1986	405	393	12
1987	423	408	15
1988	422	408	14
1989	423	409	14
1990	424	410	14

TABLE A2-2
PROJECTED ASSESSED VALUATIONS FOR CAMPBELL COUNTY AND GILLETTE

Jurisdiction/Category	Actual 1979	Projected ($ millions) 1980	1982	1984	1986	1988	1990
Campbell County							
Mineral Production							
Oil	302.4	379.8	523.9	700.1	917.7	1213.7	1605.1
Natural Gas	30.4	41.7	63.6	87.6	112.9	149.3	197.4
Coal	122.4	204.0	434.6	715.9	1069.0	1141.0	1305.8
Uranium and Other	-	-	-	13.8	20.0	29.8	40.0
Subtotal	455.2	625.5	1022.1	1517.4	2119.6	2533.8	3148.3
Industrial Facilities	10.8	28.3	34.6	43.0	45.7	45.7	45.7
Mining Equipment	19.2	30.4	48.1	68.6	90.3	97.0	101.4
Public Utilities	39.1	39.2	39.5	39.6	57.0	65.7	65.7
Residential, Commercial and Other	71.8	84.9	111.5	127.4	131.6	134.7	135.2
Total (Without ETSI)	596.2	808.4	1255.9	1795.8	2444.1	2876.8	3496.3
ETSI[a]	-	-	-	21.5	23.0	25.2	26.7
Total (With ETSI)	596.2	808.4	1255.9	1817.3	2467.1	2902.0	3523.0
Gillette							
Total (Without ETSI)	20.8	24.5	31.9	36.5	38.3	38.6	38.6
ETSI[a]	-	-	-	2.1	1.0	1.1	1.2
Total (With ETSI)	20.8	24.5	31.9	38.6	39.3	39.7	39.8

[a]Proposed action using assessment procedure A (includes indirect assessed valuation associated with the ETSI projects).

TABLE A2-3
ESTIMATED ASSESSED VALUATION ACCRUING TO
CAMPBELL COUNTY DIRECTLY FROM THE
COAL SLURRY PIPELINE SYSTEM

	($ millions)					
Assessment Year	1984[a]	1985	1986	1987	1988	1989
Proposed Action						
Procedure A	13.77	17.59	18.89	20.24	20.24	21.59
Procedure B	13.77	24.66	27.56	30.56	30.56	33.56
Colorado Route						
Procedure A	13.77	12.79	13.66	14.57	14.57	15.47
Procedure B	13.77	21.78	24.67	27.67	27.67	30.67

Procedure A = All slurry facilities in Wyoming (preparation plants, pump stations, and pipelines) are valued totally and allocated among counties based on miles of slurry line in each county.[b]

Procedure B = Same as Procedure A except that preparation plants are valued separately in Campbell County.

Note: Both procedures assume the water supply system would be valued as a separate pipeline system. Taxable value is estimated to approximately equal total construction cost less value of pollution control equipment and intangibles assumed to equal 15 pereent of total cost for preparation plants. Taxable value is converted to 1967 cost as required by current Wyoming law using an index value of 0.35. Assessed value is equal to 25 percent of taxable value. No allowance was made for depreciation in the above estimates.

[a] All facilities are assessed in their county of location until the slurry system becomes operational in late 1984.

[b] The calculations assume that the coal gathering lines in Campbell County would be considered part of the total pipeline mileage in Wyoming. As a consequence, Campbell County's share of total mileage is 45.0 percent rather than 4.6 percent.

Department of Revenue and Taxation (DRT) is uncertain about exactly how the ETSI slurry pipeline system would be assessed. The general assessment procedure for pipelines in Wyoming is for the state to calculate the value of the pipeline and related facilities as a total unit, and then apportion this total assessed value among the counties involved, based on the miles of pipeline in each county. The Wyoming DRT anticipates that the preparation plants would be included as part of the total system, and that their assessed value would be apportioned among all the counties involved. Using this interpretation, Campbell County's assessed valuation is shown as procedure A in Table A2-3.

However, if the preparation plants are valued separately, then the assessed value accruing to Campbell County would be substantially higher (procedure B, Table A2-3). This procedure would be more equitable, given the concentration of facilities and impacts in Campbell County.

In any case, the direct assessed valuation of the ETSI project accruing to Campbell County should range between $15.5 and $33.6 million, upon completion of the system. This would amount to less than one percent of the county's total assessed valuation in that year. Since the ETSI project would not involve mineral production, ETSI's assessed value is substantially lower than most other energy-related facilities being built in Campbell County. In addition, ETSI's assessed value would remain relatively constant over time; however, since mineral production is valued at current market value, the assessed value associated with mining projects would tend to keep pace with inflation.

ANALYSIS OF FUTURE FISCAL CONDITIONS

Overview

Gillette's current and future fiscal condition is less favorable than that of Campbell County or Campbell County School District #1. This differential currently shows in the quality of services and facilities the respective jurisdictions are able to provide. For example, Gillette has a crowded and outdated city hall, whereas Campbell County has a spacious, new county court house, as well as a new recreation complex that is one of the finest public recreation facilities in the entire Rocky Mountain Region. This differential is due to the

dramatic growth of county and school district revenues, which in turn is due principally to property taxes on mineral production. Gillette, on the other hand, is attempting to plan and build major capital facilities to serve a population that is four to five times its 1970 level, with a revenue base that is much less responsive to inflation and population growth.

Gillette

In Gillette, general government, police, public works administration, streets, and parks are financed out of the general fund. Water, sewer, solid waste, and electrical power services are operated on an enterprise fund basis (i.e., they should pay for themselves). Fire protection is provided by a joint powers board. Gillette contributes 0.5 mill of its 8-mill property tax levy to the board. The major general fund revenue sources are state-shared and local-option sales and use taxes, mineral royalties, and service charges (Table A2-4). General fund expenditures required to maintain existing levels of service and to build needed capital facilities are projected to increase faster than revenues, with a possible general fund deficit beginning in FY 1987 (Table A2-5). The basic reason for this trend is that most of the city's revenue sources (except for sales taxes) are not expected to keep pace with inflation.

The net fiscal impact of the ETSI project on the Gillette general fund is shown in Table A2-6. The ETSI project would have a positive impact during the first two years of construction, and a negative impact thereafter. The reason for the initial positive impact is that construction would generate substantial sales and use tax revenues, over one-half of which accrue to Gillette at the same time. Relatively few of the construction workers (most of whom would be working in the southern portion of the county) would locate in Gillette and demand city services. The impact becomes increasingly negative during operation because a higher percentage of the permanent workers are expected to locate in Gillette, yet the city would receive none of the direct property taxes on ETSI facilities. In addition, the sales taxes accruing to Gillette from operating purchases would be less than $150,000 (in 1980 dollars).

The summary of projected revenues and expenditures for the enterprise funds shown in Table A2-7 indicates that the city can expect major financial

TABLE A2-4

PROJECTION OF GENERAL FUND OPERATING REVENUES BY CATEGORY--
GILLETTE (WITH ETSI)

FISCAL YEAR	1979 ACTUAL	1980 BUDGETED	1981	1982	1983	1984	1985 PROJECTED	1986 ($1000)	1987	1988	1989	1990
POPULATION (IN THOUSANDS)		13.8	15.0	18.0	20.5	22.0	24.5	25.1	24.2	25.2	25.2	25.2
ASSESSED VALUE (IN MILLIONS)		20.8	24.5	27.7	31.9	34.4	38.6	39.6	39.3	39.7	39.7	39.7
OPERATING REVENUES												
TAXES												
SALES TAX	1334.	1525.	2001.	2164.	2255.	2382.	2585.	2637.	2568.	2753.	2748.	2754.
USE TAX	391.	658.	548.	605.	669.	732.	835.	885.	974.	1072.	1179.	1297.
GAS TAX	225.	242.	272.	306.	349.	374.	417.	428.	412.	429.	428.	429.
CIGARETTE TAX	178.	178.	204.	225.	251.	264.	288.	290.	274.	279.	273.	268.
PROPERTY TAX	133.	151.	183.	208.	240.	258.	289.	297.	295.	298.	298.	298.
MOTOR VEHICLE TAX	52.	59.	79.	98.	123.	145.	178.	200.	213.	244.	267.	295.
FRANCHISE TAX	36.	46.	55.	65.	82.	97.	118.	134.	142.	162.	178.	196.
SUBTOTAL	2351.	2851.	3344.	3670.	3965.	4252.	4580.	4871.	4877.	5237.	5370.	5537.
LICENSES/PERMITS												
LICENSES	41.	47.	51.	54.	57.	60.	63.	66.	69.	72.	76.	80.
BUILDING PERMITS	25.	25.	49.	43.	56.	33.	55.	14.	0.	22.	0.	2.
OTHER PERMITS	21.	21.	22.	23.	24.	26.	27.	28.	30.	31.	33.	34.
SUBTOTAL	87.	95.	122.	120.	137.	118.	144.	108.	98.	126.	109.	116.
SERVICE CHARGES												
FINES & FEES	137.	143.	157.	173.	193.	203.	222.	223.	210.	215.	210.	206.
PARKING METERS & LOT	4.	46.	42.	44.	46.	49.	51.	54.	56.	59.	62.	65.
STREET & CURB CUTS	4.	18.	13.	11.	14.	8.	14.	4.	0.	1.	0.	0.
ENGINEERING LIO	0.	16.	18.	19.	21.	23.	26.	28.	31.	34.	38.	41.
COUNTY ENGINEERING	15.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ANIMAL CONTROL	12.	14.	16.	18.	21.	22.	25.	25.	24.	25.	25.	25.
PLANNING FEES	12.	12.	12.	12.	12.	12.	12.	12.	12.	12.	12.	12.
BOND ADMIN. FEES	10.	10.	10.	10.	10.	10.	10.	10.	10.	10.	10.	10.
RECREATIONAL FEES	2.	3.	3.	3.	3.	4.	4.	4.	4.	4.	5.	5.
SUBTOTAL	196.	256.	270.	291.	321.	331.	363.	359.	348.	360.	361.	365.
INTERGOV'TAL REV												
MINERAL ROYALTIES	235.	290.	447.	552.	654.	758.	924.	1104.	1271.	1444.	1572.	1868.
REVENUE SHARING	64.	65.	74.	81.	91.	95.	104.	105.	99.	101.	99.	97.
LEAA	28.	11.	20.	20.	21.	20.	20.	20.	20.	20.	20.	20.
OTHER GRANTS	156.	85.	4.	4.	4.	4.	4.	4.	4.	4.	4.	4.
CETA	11.	0.	33.	36.	40.	44.	48.	53.	58.	64.	71.	78.
STATE IMPACT AID	0.	0.	151.	15.	0.	0.	0.	0.	0.	0.	0.	0.
SUBTOTAL	494.	451.	729.	708.	809.	921.	1100.	1286.	1452.	1633.	1765.	2067.
MISC.												
SALE OF EQUIPMENT	0.	35.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INTEREST INCOME	7.	7.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.
UNANTICIPATED/OTHER	67.	4.	60.	60.	60.	60.	60.	60.	60.	60.	60.	60.
SUBTOTAL	74.	46.	80.	80.	80.	80.	80.	80.	80.	80.	80.	80.
TOTAL OPERATING REVENUES	3202.	3699.	4545.	4869.	5312.	5702.	6368.	6704.	6856.	7436.	7685.	8164.
CAPITAL REVENUES	4330.	2994.	2091.	2164.	2780.	2382.	2585.	2637.	2568.	2753.	2748.	2754.
TOTAL ALL REVENUES	7532.	6693.	6636.	7033.	8092.	8085.	8953.	9341.	9424.	10190.	10433.	10919.

TABLE A2-5

SUMMARY OF PROJECTED GENERAL FUND EXPENDITURES AND REVENUES--GILLETTE (WITH ETSI)

FISCAL YEAR	1979 ACTUAL	1980 BUDGETED	1981	1982	1983	1984	1985 PROJECTED	1986 ($1000)	1987	1988	1989	1990
POPULATION (IN THOUSANDS)		13.8	16.0	18.0	20.5	22.0	24.5	25.1	24.2	25.2	25.2	25.2
ASSESSED VALUE (IN MILLIONS)		20.8	24.5	27.7	31.9	34.4	38.6	39.6	39.3	39.7	39.7	39.7
OPERATING EXPENDITURES												
GENERAL GOVERNMENT	596.	675.	774.	894.	1031.	1156.	1419.	1561.	1717.	1888.	2077.	2285.
PUBLIC SAFETY	840.	1092.	1291.	1531.	1909.	2235.	2665.	2976.	3174.	3601.	3962.	4358.
PUBLIC WORKS ADMIN.	620.	856.	920.	1074.	1251.	1413.	1721.	1802.	1932.	2180.	2398.	2638.
STREETS	469.	527.	603.	811.	892.	981.	1179.	1187.	1306.	1437.	1580.	1738.
PARKS & LANDSCAPING	100.	161.	174.	216.	264.	290.	351.	421.	425.	510.	561.	617.
TOTAL	2625.	3306.	3761.	4526.	5346.	6105.	7235.	7947.	8553.	9616.	10578.	11636.
OPERATING REVENUES	3202.	3699.	4545.	4869.	5312.	5702.	6568.	6704.	6856.	7436.	7685.	8164.
OPERATING BALANCE	577.	393.	784.	343.	-34.	-403.	-867.	-1243.	-1697.	-2180.	-2893.	-3472.
CAPITAL OUTLAYS												
CASH OUTLAYS	3058.	2724.	1374.	1386.	2151.	1427.	1469.	1254.	1266.	1286.	1345.	1340.
ADDED DEBT SERVICE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CAPITAL REVENUES	4330.	2323.	2041.	2164.	2780.	2382.	2585.	2637.	2568.	2753.	2748.	2754.
TOTAL SURPLUS/DEFICIT												
ANNUAL	1849.	-8.	1411.	1119.	595.	552.	249.	140.	-394.	-712.	-1490.	-2058.
CUMULATIVE	1849.	1841.	3252.	4372.	4966.	5519.	5768.	5907.	5513.	4801.	3311.	1253.

TABLE A2-6
NET FISCAL IMPACT OF THE
ETSI PROJECT ON GILLETTE'S GENERAL FUND ($1000)

Fiscal Year	Project Surplus (Deficit)		Net Fiscal Impact of ETSI
	With ETSI	Without ETSI	
1981	1411	1411	0
1982	1119	1119	0
1983	595	595	0
1984	552	498	+54
1985	249	231	+18
1986	140	150	-10
1987	(394)	(392)	-2
1988	(712)	(645)	-67
1989	(1490)	(1380)	-110
1990	(2058)	(1917)	-141

TABLE A2-7

SUMMARY OF PROJECTED ENTERPRISE FUND EXPENDITURES AND REVENUES--GILLETTE (WITH ETSI)

FISCAL YEAR	1979 ACTUAL	1980 BUDGETED	1981	1982	1983	1984	1985 PROJECTED ($1000)	1986	1987	1988	1989	1990
POPULATION (IN THOUSANDS)		13.8	16.0	18.0	20.5	22.0	24.5	25.1	24.2	25.2	25.2	25.2
SOLID WASTE												
EXPENSES	391.	450.	541.	1267.	894.	1091.	1317.	1355.	1594.	1754.	1929.	2122.
REVENUES	237.	396.	556.	1084.	951.	1283.	1736.	2251.	2812.	3432.	4106.	4839.
SURPLUS/DEFICIT												
ANNUAL	-154.	-54.	-15.	-183.	57.	193.	418.	896.	1218.	1679.	2177.	2718.
CUMULATIVE	-154.	-208.	-223.	-406.	-348.	-156.	263.	1159.	2377.	4055.	6233.	8950.
WATER												
EXPENSES	630.	700.	1521.	2981.	3136.	3395.	3511.	3860.	4042.	4357.	4593.	4853.
REVENUES	674.	835.	2033.	2076.	2512.	2235.	2881.	2263.	2105.	2349.	2472.	2662.
SURPLUS/DEFICIT												
ANNUAL	44.	135.	712.	-906.	-624.	-1160.	-730.	-1597.	-1937.	-2008.	-2121.	-2192.
CUMULATIVE	44.	179.	891.	-15.	-639.	-1799.	-2529.	-4126.	-6063.	-8071.	-10192.	-12383.
SEWER												
EXPENSES	545.	414.	824.	894.	975.	6193.	1124.	1242.	1315.	1395.	1483.	1580.
REVENUES	515.	451.	1336.	1291.	1632.	5091.	1784.	1043.	789.	906.	906.	960.
SURPLUS/DEFICIT												
ANNUAL	-30.	37.	512.	397.	657.	-1101.	660.	-199.	-525.	-489.	-577.	-620.
CUMULATIVE	-30.	7.	519.	917.	1574.	472.	1133.	934.	409.	-80.	-657.	-1277.
POWER												
EXPENSES	2075.	3504.	4261.	5215.	6474.	7520.	9155.	10263.	10918.	12406.	13585.	14954.
REVENUES	1959.	3496.	4501.	5533.	6926.	8152.	9966.	11232.	11902.	13623.	14929.	16458.
SURPLUS/DEFICIT												
ANNUAL	-116.	-8.	240.	318.	452.	632.	811.	969.	984.	1217.	1344.	1504.
CUMULATIVE	-116.	-124.	116.	434.	885.	1517.	2328.	3297.	4281.	5498.	6842.	8346.

difficulties in its water fund, as well. These projections are based on increasing user fees at an average annual rate of 5 percent and maintaining tap fees at their current high levels.

Separate projections of revenues and expenditures for the water fund indicate that operating revenues would be insufficient to cover operating expenditures, let alone provide any contribution to capital outlays (Table A2-8). These capital outlays are substantial. Debt service on the city's loans for the Madison Water Project alone ranges from $1.2 to $1.4 million annually. To meet expected deficits in the water fund, Gillette will have to either raise user fees substantially more than 5 percent annually or obtain additional financial assistance from other sources

There are several options for mitigating the negative impact of the ETSI project and improving Gillette's fiscal condition. Basically, revenue bases need to be restructured to provide for a more equitable allocation of revenues--particularly energy-related revenues--among cities and counties in Wyoming. There have been previous efforts in this direction--most notably, the grant and loan programs of the Farm Loan Board, and the allocation to cities of 7.5 percent of the state's share of federal royalties. Although these have provided significant help to cities trying to finance the public service demands of energy-related population growth, additional assistance is needed. A state legislative committee currently is investigating alternative mechanisms by which to provide a permanent system of state impact assistance.

In addition, ETSI could provide incentives for its permanent employees to locate within the city limits of Gillette. Gillette is investing heavily in sewer and water facilities to meet future needs, and would like as many people as possible to locate within the city in the near term so that debt service costs can be spread over a larger population.

ETSI also could work with housing developers in the area, and use its financial resources to guarantee the timely production of quality, affordable housing, consistent with the planning efforts of the city. Properly planned and built developments are less expensive for the city to service. In addition, other

TABLE A2-8

PROJECTION OF ENTERPRISE FUND BUDGETS BY CATEGORY--WATER
GILLETTE (WITH ETSI)

FISCAL YEAR	1979 ACTUAL	1980 BUDGETED	1981	1982	1983	1984	1985 PROJECTED	1986 ($1000)	1987	1988	1989	1990
EMPLOYMENT	12.	13.	14.	16.	17.	19.	20.	21.	21.	22.	22.	22.
OPERATING EXPENDITURES												
WAGES	171.	285.	357.	449.	525.	645.	747.	863.	948.	1094.	1203.	1324.
OTHER OPERATING	291.	223.	454.	584.	682.	839.	971.	1122.	1234.	1422.	1565.	1721.
INSURANCE	19.	23.	25.	28.	31.	34.	37.	41.	45.	49.	54.	60.
TOTAL	481.	526.	847.	1061.	1238.	1518.	1756.	2026.	2228.	2566.	2822.	3105.
OPERATING REVENUES												
WATER USER FEES	409.	455.	555.	654.	784.	883.	1033.	1112.	1125.	1231.	1288.	1357.
WATER TAP FEES	234.	234.	831.	731.	952.	554.	935.	234.	0.	37.	0.	3.
WATER TAP MATERIALS	26.	26.	92.	81.	105.	61.	103.	26.	0.	4.	0.	0.
MISC.	5.	5.	5.	5.	5.	5.	5.	5.	5.	5.	5.	5.
TOTAL	674.	720.	1483.	1471.	1847.	1503.	2076.	1377.	1130.	1277.	1293.	1365.
OPERATING BALANCE	193.	194.	635.	410.	609.	-15.	320.	-648.	-1098.	-1288.	-1529.	-1740.
CAPITAL PROJECTS												
MADISON PROJECT	744.	6460.	10300.	4296.	0.	0.	0.	0.	0.	0.	0.	0.
SYST MAINT/IMPROV	36.	63.	365.	365.	365.	365.	365.	365.	365.	365.	365.	365.
JT. POWER LOAN REPAY	113.	111.	109.	107.	104.	102.	100.	98.	96.	94.	93.	91.
TOTAL	893.	6634.	10474.	4768.	469.	467.	465.	463.	461.	459.	458.	456.
CAPITAL OUTLAYS												
CASH OUTLAYS	149.	174.	474.	472.	469.	467.	465.	463.	461.	459.	458.	456.
ADDED DEBT SERVICE	0.	0.	0.	1449.	1429.	1410.	1390.	1371.	1352.	1332.	1313.	1293.
CAPITAL REVENUES												
TRANSF FROM GEN FUND	0.	115.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
LOC. OPTION USE	0.	0.	550.	605.	665.	732.	805.	886.	974.	1072.	1179.	1297.
TOTAL	0.	115.	550.	605.	665.	732.	805.	886.	974.	1072.	1179.	1297.
TOTAL SURPLUS/DEFICIT												
ANNUAL	44.	135.	712.	-906.	-624.	-1160.	-730.	-1597.	-1937.	-2008.	-2121.	-2192.
CUMULATIVE	44.	179.	891.	-15.	-639.	-1799.	-2529.	-4126.	-6063.	-8071.	-10192.	-12383.

companies in the area have found their efforts to make quality housing available to employees beneficial in terms of lower employee turnover and improved productivity.

Cumulative Effects on Campbell County

In Campbell County, general administration, public safety, human services, and public works are financed out of the county's general fund. Separate funds provide for parks and recreation, the airport, the library, the museum, the fair, and bond repayment. The local property tax and the state-shared and local-option sales tax currently account for two-thirds of all general fund revenues. At current tax rates, the county's general fund revenues are projected to nearly triple by FY 1990 because of the growth in assessed value (Table A2-9). This revenue growth will be more than adequate to meet projected expenditure needs during the 1980s (Table A2-10). The projected surpluses indicate that the county will have the opportunity to increase its level of service, provide additional services (perhaps taking over some services currently provided by Gillette), or reduce its tax rates.

The net fiscal impact of the ETSI project on the Campbell County General Fund is shown in Table A2-11 (for the proposed action with assessment procedure A). In the first year, ETSI's impact is negative because of the lag time in the assessment and receipt of property tax revenues. During the next few years, the project's positive impact begins to decline as the effect of inflation on expenditures overtakes the stable assessed value of the project and the resulting revenues. The small negative effects during the last two years are not significant, given the county's projected surpluses throughout this period.

Table A2-12 compares the net fiscal impacts of alternative routes and assessment procedures. If the preparation plants are valued separately, as in Procedure B, the proposed action would have a positive impact in all years after the initial year. The Colorado alternative is less desirable in terms of its net fiscal impact on Campbell County's General Fund.

Campbell County School District #1. One unified school district serves the entire county. Property taxes provide over 90 percent of the district's current

TABLE A2-9

PROJECTION OF GENERAL FUND OPERATING REVENUES BY CATEGORY--
CAMPBELL CO (WITH ETSI)

FISCAL YEAR	1979 ACTUAL	1980 BUDGETED	1981	1982	1983	1984	1985 PROJECTED	1986 ($1000)	1987	1988	1989	1990
POPULATION (IN THOUSANDS)		26.6	31.4	33.8	38.2	41.0	45.1	46.1	44.8	46.5	46.4	46.5
ASSESSED VALUE (IN MILLIONS)		596.2	759.3	1009.1	1216.8	1485.3	1778.2	2130.4	2428.0	2603.7	2862.9	3155.8
OPERATING REVENUES												
LOCAL TAXES												
PROPERTY TAX	2697.	4660.	6012.	7887.	9510.	11605.	13898.	16651.	18977.	20350.	22376.	24666.
DELINQUENT TAXES	138.	138.	100.	100.	100.	100.	100.	100.	100.	100.	100.	100.
MOTOR VEHICLE TAXES	134.	134.	167.	204.	254.	306.	363.	409.	436.	499.	547.	604.
OPTIONAL SALES	1059.	1171.	1633.	1733.	2028.	2142.	2325.	2372.	2310.	2297.	2292.	2298.
OPTIONAL USE	0.	0.	15.	18.	20.	22.	24.	27.	29.	32.	35.	39.
SUBTOTAL	4028.	5103.	7930.	9943.	11912.	14174.	16710.	19558.	21852.	23278.	25351.	27706.
STATE SHARED TAXES												
SALES	1371.	1370.	1603.	1733.	2028.	2142.	2325.	2372.	2310.	2297.	2292.	2298.
USE	16.	15.	16.	18.	20.	22.	24.	27.	29.	32.	35.	39.
GASOLINE	288.	285.	298.	325.	360.	378.	407.	409.	389.	396.	387.	380.
CIGARETTE	7.	6.	9.	10.	11.	12.	14.	14.	13.	14.	14.	14.
SUBTOTAL	1682.	1676.	1927.	2086.	2419.	2555.	2770.	2821.	2741.	2739.	2728.	2731.
FINES & FEES												
SUBTOTAL	335.	286.	399.	520.	690.	840.	1056.	1199.	1266.	1467.	1609.	1777.
INTERGOV'TAL REV.												
REVENUE SHARING	262.	258.	253.	248.	243.	238.	234.	229.	224.	220.	216.	211.
IN LIEU OF TAXES	149.	28.	28.	28.	28.	28.	28.	28.	28.	28.	28.	28.
MINERAL ROYALTY	163.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
BANK HEAD JONES	51.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.
SUBTOTAL	623.	303.	298.	293.	288.	283.	278.	273.	269.	264.	260.	256.
MISCELLANEOUS												
INTEREST	226.	225.	225.	225.	225.	225.	225.	225.	225.	225.	225.	225.
OTHER	110.	52.	67.	82.	102.	120.	145.	163.	175.	199.	219.	241.
SUBTOTAL	336.	277.	292.	307.	327.	345.	370.	388.	400.	424.	444.	466.
BEGINNING BALANCE												
SUBTOTAL	1123.	2416.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
TOTAL OPERATING REVENUES	8128.	11061.	10816.	13149.	15635.	18196.	21183.	24240.	26528.	28172.	30392.	32936.
CAPITAL REVENUES	0.	0.	0.	998.	0.	0.	0.	0.	0.	0.	0.	0.
TOTAL ALL REVENUES	8128.	11061.	10816.	14147.	15635.	18196.	21183.	24240.	26528.	28172.	30392.	32936.

TABLE A2-10

SUMMARY OF PROJECTED GENERAL FUND EXPENDITURES AND REVENUES--CAMPBELL CO (WITH ETSI)

FISCAL YEAR	1979 ACTUAL	1980 BUDGETED	1981	1982	1983	1984	1985 PROJECTED ($1000)	1986	1987	1988	1989	1990
POPULATION (IN THOUSANDS)		26.6	31.4	33.8	38.2	41.0	45.1	46.1	44.8	46.5	46.4	46.5
ASSESSED VALUE (IN MILLIONS)		596.2	769.3	1009.1	1216.8	1485.3	1778.2	2130.4	2428.0	2603.7	2862.9	3155.8
OPERATING EXPENDITURES												
ADMINISTRATION	1276.	1716.	2167.	2560.	3167.	3725.	4492.	5052.	5401.	6164.	6766.	7461.
PUBLIC SAFETY	908.	1207.	1505.	1827.	2256.	2652.	3194.	3592.	3841.	4382.	4810.	5304.
HUMAN SERVICES	342.	515.	579.	698.	856.	1002.	1202.	1350.	1445.	1645.	1807.	1992.
PUBLIC WORKS	3764.	4296.	4677.	5169.	5722.	6318.	6989.	7699.	8454.	9321.	10252.	11279.
CASH RESERVE	1000.	1000.	1000.	1000.	1000.	1000.	1000.	1000.	1000.	1000.	1000.	1000.
TOTAL	7290.	8734.	9928.	11254.	13001.	14697.	16876.	18693.	20141.	22513.	24635.	27037.
OPERATING REVENUES	8128.	11061.	10816.	13149.	15635.	18196.	21183.	24240.	26529.	28172.	30392.	32936.
OPERATING BALANCE	839.	2327.	948.	1895.	2635.	3499.	4307.	5547.	6387.	5659.	5758.	5899.
CAPITAL OUTLAYS												
CASH OUTLAYS	839.	2320.	500.	998.	22.	22.	1522.	22.	22.	22.	22.	22.
ADDED DEBT SERVICE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CAPITAL REVENUES	0.	0.	0.	998.	0.	0.	0.	0.	0.	0.	0.	0.
TOTAL SURPLUS/DEFICIT												
ANNUAL	-0.	7.	448.	1895.	2613.	3477.	2785.	5525.	6365.	5637.	5736.	5877.
CUMULATIVE	-0.	7.	454.	2349.	4962.	8438.	11223.	16748.	23113.	28751.	34486.	40363.

TABLE A2-11
NET FISCAL IMPACT OF THE
ETSI PROJECT ON CAMPBELL COUNTY'S GENERAL FUND ($$1000)

Fiscal Year	Projected Surplus (Deficit)		Net Fiscal Impact of ETSI
	With ETSI*	Without ETSI	
1981	448	448	0
1982	1895	1895	0
1983	2613	2613	0
1984	3477	3534	-57
1985	2785	2756	+29
1986	5525	5445	+80
1987	6365	6311	+54
1988	5637	5626	+11
1989	5736	5748	-12
1990	5877	5913	-36

*Proposed action assuming assessment with "Procedure A."

TABLE A2-12

NET FISCAL IMPACT OF ALTERNATIVE ROUTES
AND ASSESSMENT PROCEDURES OF THE
ETSI PROJECT ON CAMPBELL COUNTY'S GENERAL FUND ($1000)

	Proposed Action		Colorado Alternative	
Fiscal Year	Procedure A	Procedure B	Procedure A	Procedure B
1984	-57	-57	-57	-57
1985	+29	+29	+29	+29
1986	+80	+135	+42	+112
1987	+54	+122	+13	+99
1988	+11	+92	-33	+70
1989	-12	+68	-57	+46
1990	-36	+57	-84	+34

Source: Based on the assessed values estimated in Table 4.

revenues. These property taxes are generated primarily by the mandatory 12-mill county equalization levy and the special district levy, which currently is at 25 mills (the maximum allowed by state law).

Given the expected growth in school district assessed value, district revenues would increase dramatically if the current mill levies were maintained (Table A2-13). These revenues would greatly exceed projected expenditure requirements, including capital expenditures for new schools (Table A2-14). The court-ordered reorganization of school financing in Wyoming is likely to reduce the revenues available to the district in the future, but the district probably will still be able to meet expenditures and reduce tax rates at the same time.

The net fiscal impact of the ETSI project on the school district is negative (Table A2-15). The district relies almost exclusively on property taxes, and the assessed value of the ETSI project per student associated with the project is less than most other projects (which have comparable numbers of students but much higher assessed values). However, this negative impact is not significant, given the district's excellent revenue position.

TABLE A2-13

PROJECTION OF GENERAL FUND REVENUES--SCHL DIST 1 (WITH ETSI)

FISCAL YEAR	1979 ACTUAL	1980 BUDGETED	1981	1982	1983	1984	1985 PROJECTED ($1000)	1986	1987	1988	1989	1990
ENROLLMENT (IN THOUSANDS)		5.1	5.9	6.6	7.5	8.0	8.8	9.0	8.8	9.1	9.1	9.1
ASSESSED VALUE (IN MILLIONS)		596.2	769.3	1009.1	1216.8	1485.3	1778.2	2130.4	2428.0	2603.7	2862.9	3155.8
OPERATING REVENUES												
LOCAL PROP TAX 25ML	13566.	14904.	19251.	25227.	30419.	37133.	44454.	53260.	60700.	65091.	71572.	78896.
COUNTY PROP TAX 12ML	6448.	7667.	9251.	12109.	14601.	17824.	21338.	25565.	29136.	31244.	34355.	37870.
OTHER LOCAL REVENUE	1044.	1105.	1326.	1546.	1836.	2067.	2387.	2565.	2615.	2852.	2988.	3146.
MISC REVENUE	1149.	1121.	1260.	1300.	1400.	1500.	1600.	1700.	1800.	1900.	2000.	2100.
TOTAL	22007.	24797.	30989.	40182.	48256.	58523.	69780.	83091.	94251.	101088.	110915.	122012.
CAPITAL REVENUES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
TOTAL ALL REVENUES	22007.	24797.	30989.	40182.	48256.	58523.	69780.	83091.	94251.	101088.	110915.	122012.

TABLE A2-14

SUMMARY OF PROJECTED GENERAL FUND EXPENDITURES AND REVENUES--SCHL DIST 1 (WITH ETSI)

FISCAL YEAR	1979 ACTUAL	1980 BUDGETED	1981	1982	1983	1984	1985 PROJECTED ($1000)	1986	1987	1988	1989	1990
ENROLLMENT (IN THOUSANDS)		5.1	5.9	6.6	7.5	8.0	8.8	9.0	8.8	9.1	9.1	9.1
ASSESSED VALUE (IN MILLIONS)		596.2	769.3	1009.1	1216.8	1485.3	1778.2	2130.4	2428.0	2603.7	2862.9	3155.8
OPERATING EXPENDITURES												
INSTRUCTION PROGRAM	7960.	9209.	11698.	14298.	17956.	21108.	25598.	28844.	30780.	35210.	38644.	42623.
GEN SUPPORT PROGRAM	4852.	8226.	6995.	8423.	10328.	11986.	14277.	15790.	16543.	18580.	20021.	21681.
TOTAL	12812.	17435.	18653.	22720.	28284.	33094.	39886.	44634.	47323.	53790.	58664.	64304.
OPERATING REVENUES	22007.	24797.	30989.	40182.	48256.	58523.	69780.	83091.	94251.	101088.	110915.	122012.
OPERATING BALANCE	9195.	7362.	12335.	17462.	20072.	25429.	29894.	38457.	46928.	47298.	52251.	57708.
CAPITAL OUTLAYS												
CASH OUTLAYS	3000.	7600.	8750.	7260.	4392.	0.	5315.	9965.	10962.	7074.	0.	0.
ADDED DEBT SERVICE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CAPITAL REVENUES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
TOTAL SURPLUS/DEFICIT												
ANNUAL	6195.	-238.	3635.	10202.	15680.	25429.	24579.	28492.	35966.	40224.	52251.	57708.
CUMULATIVE	6195.	5957.	9592.	19794.	35474.	60903.	85483.	113974.	149940.	190165.	242416.	300124.

TABLE A2-15

NET FISCAL IMPACT OF THE
ETSI PROJECT ON CAMPBELL COUNTY'S SCHOOL DISTRICT #1 ($1000)

Fiscal Year	Projected Surplus (Deficit)		Net Fiscal Impact of ETSI
	With ETSI*	Without ETSI	
1981	3,635	3,635	0
1982	10,202	10,202	0
1983	15,680	15,680	0
1984	25,429	27,184	-1755
1985	24,579	25,694	-1115
1986	28,492	28,701	-209
1987	35,966	36,457	-491
1988	40,224	41,056	-832
1989	52,251	53,167	-916
1990	57,708	58,750	-1042

*Proposed action assuming assessment with "Procedure A."

APPENDIX A-3

Comparison of Alternatives

TABLE A3-1

COMPARISON OF EFFECTS OF PROJECT ALTERNATIVES: CAMPBELL COUNTY (GPA)

Campbell County (GPA)	Baseline Existing (1979)	Baseline Projected (1984)	Baseline Projected (1990)	Without Coal Cleaning: Proposed Action Alt.	Without Coal Cleaning: Mkt. Alt.	Without Coal Cleaning: Barge Alt.	With Coal Cleaning: Proposed Action Alt.	With Coal Cleaning: Mkt. Alt.	With Coal Cleaning: Barge Alt.
Employment	8000	14,000	14,800						
Fixed site				645	715	730	733	821	838
% of 1984 total				4.6%	5.1%	5.2%	5.2%	5.9%	6.0%
Permanent				233	288	327	293	361	409
% of 1990 total				1.6%	1.9%	2.2%	2.0%	2.4%	2.8%
Population	18,600	31,700	33,500						
Fixed site				1297	1439	1468	1461	1653	1685
% of 1984 total				4.1%	4.5%	4.6%	4.6%	5.2%	5.3%
Permanent				465	573	653	583	718	815
% of 1990 total				1.4%	1.7%	1.9%	1.7%	2.1%	2.4%
Household	5,719	10,000	10,500						
Fixed site				554	615	627	630	706	720
% of 1984 total				5.5%	6.2%	6.3%	6.3%	7.1%	7.2%
Permanent				186	229	261	283	287	326
% of 1990 total				1.8%	2.2%	2.5%	2.2%	2.7%	3.1%

TABLE A3-2

COMPARISON OF EFFECTS OF PROJECT ALTERNATIVES: CONVERSE COUNTY

Converse County	Baseline Existing (1979)	Baseline Projected (1984)	Baseline Projected (1990)	Without Coal Cleaning: Proposed Action Alt.	Without Coal Cleaning: Mkt. Alt.	Without Coal Cleaning: Barge Alt.	With Coal Cleaning: Proposed Action Alt.	With Coal Cleaning: Mkt. Alt.	With Coal Cleaning: Barge Alt.
Employment	5,932	7,600	8,400						
Fixed site				38	38	38	45	45	45
% of 1984 total				0.5%	0.4%	0.4%	0.6%	0.6%	0.6%
Permanent				26	26	26	33	33	33
% of 1990 total				0.3%	0.3%	0.3%	0.4%	0.4%	0.4%
Population	13,400	14,700 18,700	15,600 21,800						
Fixed site				78	78	78	92	92	92
% of 1984 total				0.5%	0.5%	0.5%	0.6%	0.6%	0.6%
Permanent				53	53	53	65	65	65
% of 1990 total				0.3%	0.3%	0.3%	0.4%	0.4%	0.4%
Household/I.U.	4,700	5,900	6,600						
Fixed site				33	33	33	39	39	39
% of 1984 total				0.5%	0.5%	0.5%	0.7%	0.7%	0.7%
Permanent				21	21	21	26	26	26
% of 1990 total				0.3%	0.3%	0.3%	0.4%	0.4%	0.4%

TABLE A3-3

COMPARISON OF EFFECTS OF PROJECT ALTERNATIVES: WESTON COUNTY

Weston County	Baseline Existing (1979)	Baseline Projected (1980)	Baseline Projected (1984)	Without Coal Cleaning: Proposed Action Alt.	Without Coal Cleaning: Mkt. Alt.	Without Coal Cleaning: Barge Alt.	With Coal Cleaning: Proposed Action Alt.	With Coal Cleaning: Mkt. Alt.	With Coal Cleaning: Barge Alt.
Employment	3,346	3,800	4,400						
Fixed site				107	83	69	136	104	86
% of 1984 total				2.8%	2.2%	1.8%	3.6%	2.7%	2.3%
Permanent				86	68	55	108	86	68
% of 1990 total				1.9%	1.5%	1.0%	2.5%	2.0%	1.5%
Population									
Weston County	7,900	8,700	10,000						
Newcastle	3,900	5,000	6,000						
Fixed site				216	167	138	273	208	175
% of Newcastle pop. (1984)				4.3%	3.3%	2.7%	5.5%	4.2%	3.5%
Permanent				170	135	110	215	171	135
% of 1990 Newcastle pop.				2.8%	2.2%	1.8%	3.6%	2.9%	2.3%
Household									
Weston County	2,700	2,900	3,400						
Newcastle	1,350	1,700	2,000						
Fixed site				92	71	59	117	89	74
% of 1984 total				5.4%	4.2%	3.5%	6.9%	5.2%	4.4%
Permanent				68	54	44	86	68	54
% of 1990 total				3.4%	2.7%	2.2%	4.3%	3.4%	2.7%

TABLE A3-4

COMPARISON OF EFFECTS OF PROJECT ALTERNATIVES: NIOBRARA COUNTY

Niobrara County	Baseline Existing (1979)	Baseline Projected (1984)	Baseline Projected (1990)	Without Coal Cleaning: Proposed Action Alt.	Without Coal Cleaning: Mkt. Alt.	Without Coal Cleaning: Barge Alt.	With Coal Cleaning: Proposed Action Alt.	With Coal Cleaning: Mkt. Alt.	With Coal Cleaning: Barge Alt.
Employment	1,429	1,450	1,500						
Fixed site				202	202	202	223	223	223
% of 1984 total				13.9%	13.9%	13.9%	15.4%	15.4%	15.4%
Permanent				20	20	20	21	21	21
% of 1990 total				1.3%	1.3%	1.3%	1.4%	1.4%	1.4%
Population									
Niobrara	3,132	3,200	3,300						
Lusk	1,750	1,900	2,000						
Fixed site				405	405	405	463	463	463
% of 1984 - County				12.7%	12.7%	12.7%	14.5%	14.5%	14.5%
% of 1984 - Newcastle				21.3%	21.3%	21.3%	24.4%	24.4%	24.4%
Permanent				40	40	40	43	43	43
% of 1990 Newcastle				2.0%	2.0%	2.0%	2.2%	2.2%	2.2%
Households/IU									
	1,160	1,185	1,222						
	650	700	740						
Fixed site				173	173	173	199	199	199
% of 1984 County				14.6%	14.6%	14.6%	16.8%	16.8%	16.8%
% of 1984 Newcastle				24.7%	24.7%	24.7%	28.4%	28.4%	28.4%
Permanent				16	16	16	18	18	18
% of 1990 Newcastle				2.1%	2.1%	2.1%	2.4%	2.4%	2.4%

APPENDIX A-4

Study Area Profiles

C515A.F

STUDY AREA PROFILE AND ASSESSMENT

Number: 2 Name: Northwest Nebraska

Strip Maps: A-4 to A-7

Pertinent Alternatives: proposed action, market alt., pipeline/barge alt.

Area Profile:

Counties where project components located:	Population
1. Sioux	2,000
2. Box Butte	12,400
3. Morrill	6,100
4. Garden	2,900
5. Deuel	2,400
Other Counties included in local study area:	
6. Scotts Bluff	36,200
Total	62,000

Communities	County/ Parish	State	1975 Population	Distance (miles)	Milepost
Scottsbluff	Scotts Bluff	NB	12,655	30	175
Alliance	Box Butte	NB	6,990	18	175

Temporary Housing Availability: (1980)

Community	Hotel/Motel rooms	Hotel/Motel Construction	Rental units	Rental Vacancy Rate (%)	Rental Unit Construction
Scottsbluff	500	none	330	10	12

Mobile Home Parks/spaces	RV Parks/Spaces	Mobile home spaces vacant, planned, or under construction
4 parks	1 park	none

Construction Activities: pipeline spread: I construction period: 2nd 1/4 1984

Construction spread workforce profile: assumed local/nonlocal ratio: 25/75

Total Workers	Nonlocal Workers	Mobile Population	Nonlocals with Mobile Living Quarters	Demand for Temporary Housing Units: Single Workers	Workers With Families	Total
Typical: 670	503	654	121	241	61	302
Rough Terrain: (748)	(562)	(731)	(135)	(269)	(68)	(337)

Pump Station: No. P-4 at MP231.1 Peak Manpower: 49 Construction Period: 1983-1984

Nearby Community	County/ Parish	State	Population (1975)	Hwy. Dist. (miles)	Milepost
Oshkosh	Garden	Nebraska	2,500	8	231.1

Sources:
U.S. Bureau of The Census 1978
Shade 1980
Chamber of Commerce, Scottsbluff, Nebraska 1980
Berzina 1980

ESTIMATES OF ETSI PROPERTY TAXES AND COMPARISON WITH EXISTING COUNTY PROPERTY TAXES 1976-1977, NORTHWEST NEBRASKA

County	Estimated ETSI Property Tax (1980 Dollars)[1]			County Local Property Tax 1976-77[2]		Evaluation of ETSI (1980 $) Revenues[3]			
	Assessed Valuation of ETSI Components (X $1000)	Tax Factor (Percent)	Revenues (X $1000)	Assessed Valuation Subject to tax (X $1000)	Property Tax Revenues (X $1000)	ETSI Assessed Valuation and Existing Assessed Valuation (X $1000) 1+4	ETSI Assessed Valuation As a percent of Existing Assessed Valuation (X $1000) 1÷4	Sum ETSI Revenues and 1976-77 Revenues (X $1000) 3+5	ETSI Revenues As a percent of 1976-77 Revenues 3÷5
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Nebraska									
Sioux	41,700	2.10	880	21,936	611	63,636	190	1,491	144
Box Butte	14,400	2.10	300	42,183	3,557	56,583	34	3,557	8
Morrill	56,700	2.10	1,190	33,574	2,295	90,274	169	3,485	52
Garden	46,400	2.10	970	24,689	1,571	71,089	188	2,541	62
Deuel	5,200	2.10	110	19,458	1,410	24,658	27	1,520	8

[1]ETSI 1980. Assessed value and property taxes by county were estimated by ETSI for the EIS by extrapolating previously developed unit cost estimates for components and should in no way be construed as representing the cost estimate for the components. Values shown on this table were derived by ETSI as follows:

Sum of estimated cost of components in county x statewide ratio of assessed value to market value = assessed valuation of ETSI components x property tax rate (percent) assumed for county = estimated ETSI property taxes (in 1980 dollars)

[2]U.S. Bureau of the Census, 1977 Census of Governments.

[3]Column 6 is the sum of estimated ETSI assessed valuation (AV) as of 1980 and the 1976-77 total county assessed valuation (i.e., column 6 = column 1 + column 4).

Column 7 is the ratio of the ETSI AV to the 1976-77 total county AV expressed as a percent (i.e., column 7 = column 1 divided by column 4).

Column 8 is the sum of the estimated ETSI property tax revenues and the 1976-77 total county property tax revenues (i.e., column 8 = column 3 plus column 5).

Column 9 is the ratio of the estimated ETSI revenues to the 1976-77 total county property tax revenues expressed as a percent (i.e., column 9 = column 3 divided by column 5).

C515A.F

STUDY AREA PROFILE AND ASSESSMENT

Number: 3 Name: Southwest Nebraska

Strip Maps: A-7 to A-9

Pertinent Alternatives: proposed action, market alt., pipeline/barge alt.

Area Profile:

Counties where project components located:	Population
Keith	10,100
Perkins	3,500
Chase	4,800
Hayes	1,500
Hitchcock	4,000
Red Willow	12,800
Other Counties included in local study area:	Total 36,700
none	

Communities	County/ Parish	State	1975 Population	Distance (miles)	Milepost
Ogallala	Keith	NB	5,442	6	265
McCook	Red Willow	NB	8,455	5	360

Temporary Housing Availability: (1980)

Community	Hotel/Motel rooms	Hotel/Motel Construction	Rental units	Rental Vacancy Rate (%)	Rental Unit Construction
Ogallala	280	none	75	very low	25
McCook	217	25 units	unknown	unknown	unknown

Mobile Home Parks/spaces	RV Parks/Spaces	Mobile home spaces vacant, planned, or under construction
4/150	2/75	none
/500	/20	none

Construction Activities: pipeline spread: I construction period: 2nd 1/4 1984

Construction spread workforce profile: assumed local/nonlocal ratio 25/75

Total Workers	Nonlocal Workers	Mobile Population	Nonlocals with Mobile Living Quarters	Demand for Temporary Housing Units: Single Workers	Workers With Families	Total
Typical: 670	503	654	121	241	61	302
Rough Terrain: (748)	(562)	(731)	(135)	(269)	(68)	(337)

Pump Station: No. P-5 at mile 373.9 Peak Manpower: 49 Construction Period: 1983 - 1984
Assumed local/nonlocal ratio 25/75

Nearby Community	County/ Parish	State	Population (1975)	Hwy. Dist. (miles)	Milepost
McCook	Red Willow	NB	8,455	12	373.9

Sources:
U.S. Bureau of the Census 1980
McQuary 1980
Casper 1980

ESTIMATES OF ETSI PROPERTY TAXES AND COMPARISON WITH EXISTING COUNTY PROPERTY TAXES 1976-1977, SOUTHWEST NEBRASKA

County	Estimated ETSI Property Tax[1] (1980 Dollars)			County Local Property Tax[2] 1976-77		Evaluation of ETSI[3] (1980 $) Revenues			
	Assessed Valuation of ETSI Components (X $1000)	Tax Factor (Percent)	Revenues (X $1000)	Assessed Valuation Subject to tax (X $1000)	Property Tax Revenues (X $1000)	ETSI Assesssed Valuation and Existing Assessed Valuation (X $1000) 1+4	ETSI Assessed Valuation As a percent of Existing Assessed Valuation (X $1000) 1÷4	Sum ETSI Revenues and 1976-77 Revenues (X $1000) 3+5	ETSI Revenues As a percent of 1976-77 Revenues 3÷5
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Keith	19,100	2.10	400	44,758	4,134	63,858	43	4,534	10
Perkins	29,900	2.10	630	31,075	2,022	60,975	96	2,652	31
Chase	16,500	2.10	350	32,775	2,743	49,475	50	3,093	13
Hayes	27,800	2.10	580	14,630	648	42,430	190	1,228	90
Hitchcock	13,900	2.10	290	23,750	2,201	37,650	59	2,491	13
Red Willow	30,400	2.10	640	50,420	4,607	80,820	60	5,247	14

[1]ETSI 1980. Assessed value and property taxes by county were estimated by ETSI for the EIS by extrapolating previously developed unit cost estimates for components and should in no way be construed as representing the cost estimate for the components. Values shown on this table were derived by ETSI as follows:

Sum of estimated cost of components in county x statewide ratio of assessed value to market value = assessed valuation of ETSI components x property tax rate (percent) assumed for county = estimated ETSI property taxes (in 1980 dollars)

[2]U.S. Bureau of the Census, 1977 Census of Governments.

[3]Column 6 is the sum of estimated ETSI assessed valuation (AV) as of 1980 and the 1976-77 total county assessed valuation (i.e., column 6 = column 1 + column 4).

Column 7 is the ratio of the ETSI AV to the 1976-77 total county AV expressed as a percent (i.e., column 7 = column 1 divided by column 4).

Column 8 is the sum of the estimated ETSI property tax revenues and the 1976-77 total county property tax revenues (i.e., column 8 = column 3 plus column 5).

Column 9 is the ratio of the estimated ETSI revenues to the 1976-77 total county property tax revenues expressed as a percent (i.e., column 9 = column 3 divided by column 5).

C515A.F

STUDY AREA PROFILE AND ASSESSMENT

Number: 4PA Name: North Kansas

Strip Maps: A-10 and A-11

Pertinent Alternatives: Proposed Action only

Area Profile:

Counties where project components located:	Population
1. Decatur	5,100
2. Norton	6,700
3. Graham	4,400
4. Trego	4,400
5. Ellis	27,400
6. Rush	4,800
7. Barton	31,600
Other Counties included in local study area:	Total 84,400
none	

Communities	County/ Parish	State	1975 Population	Distance (miles)	Milepost
Hays	Ellis	NB	16,544	10	485

Temporary Housing Availability:

Community	Hotel/Motel rooms	Hotel/Motel Construction	Rental units	Rental Vacancy Rate (%)	Rental Unit Construction
Hays	741	none	unknown	low	none

Mobile Home Parks/spaces	RV Parks/Spaces	Mobile home spaces vacant, planned, or under construction
10/365	1/18	28 vacant

Construction Activities: pipeline spread: II construction period: 3rd + 4th 1/4 1983

Construction spread workforce profile: local/nonlocal ratio 50/50

Total Workers	Nonlocal Workers	Mobile Population	Nonlocals with Mobile Living Quarters	Demand for Temporary Housing Units: Single Workers	Workers With Families	Total
Typical: 670	335	463	80	161	41	202
Rough Terrain: (748)	(374)	(486)	(89)	(180)	(46)	(226)

Pump Station: No. P-6 at mile 408.5 Peak Manpower: 49 Construction Period: 1983-1984
local/nonlocal ratio 50/50

Nearby Community	County/ Parish	State	Population (1975)	Hwy. Dist. (miles)	Milepost
Oberlin	Decatur	KS	2,500	30	408.5

Sources:
U.S. Bureau of The Census 1978
Dreiling 1980

ESTIMATES OF ETSI PROPERTY TAXES AND COMPARISON WITH EXISTING COUNTY PROPERTY TAXES 1976-1977, NORTH KANSAS

County	Estimated ETSI Property Tax (1980 Dollars)[1]			County Local Property Tax 1976-77[2]		Evaluation of ETSI[3] (1980 $) Revenues			
	Assessed Valuation of ETSI Components (X $1000)	Tax Factor (Percent)	Revenues (X $1000)	Assessed Valuation Subject to tax (X $1000)	Property Tax Revenues (X $1000)	ETSI Assesssed Valuation and Existing Assessed Valuation (X $1000) 1+4	ETSI Assessed Valuation As a percent of Existing Assessed Valuation (X $1000) 1÷4	Sum ETSI Revenues and 1976-77 Revenues (X $1000) 3+5	ETSI Revenues As a percent of 1976-77 Revenues 3÷5
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Decatur	48,700	1.45	710	27,979	2,192	76,679	174	2,902	32
Norton	5,300	1.41	70	27,019	2,452	32,319	19	2,522	3
Graham	38,000	2.25	860	38,500	3,145	76,500	99	3,005	40
Trego	19,100	1.22	230	26,701	1,608	45,801	72	1,838	14
Ellis	22,200	1.77	390	100,744	6,902	122,944	22	7,292	6
Rush	28,100	1.28	360	33,714	2,566	61,814	83	2,926	14
Barton	18,600	1.97	370	148,818	9,368	167,418	12	9,738	4

[1]ETSI 1980. Assessed value and property taxes by county were estimated by ETSI for the EIS by extrapolating previously developed unit cost estimates for components and should in no way be construed as representing the cost estimate for the components. Values shown on this table were derived by ETSI as follows:

Sum of estimated cost of components in county x statewide ratio of assessed value to market value = assessed valuation of ETSI components x property tax rate (percent) assumed for county = estimated ETSI property taxes (in 1980 dollars)

[2]U.S. Bureau of the Census, 1977 Census of Governments.

[3]Column 6 is the sum of estimated ETSI assessed valuation (AV) as of 1980 and the 1976-77 total county assessed valuation (i.e., column 6 = column 1 + column 4).

Column 7 is the ratio of the ETSI AV to the 1976-77 total county AV expressed as a percent (i.e., column 7 = column 1 divided by column 4).

Column 8 is the sum of the estimated ETSI property tax revenues and the 1976-77 total county property tax revenues (i.e., column 8 = column 3 plus column 5).

Column 9 is the ratio of the estimated ETSI revenues to the 1976-77 total county property tax revenues expressed as a percent (i.e., column 9 = column 3 divided by column 5).

STUDY AREA PROFILE AND ASSESSMENT

Number: 4MA Name: North Kansas

Strip Maps: A-34 to A-37

Pertinent Alternatives: Market Alt., pipeline/barge Alt. only

Area Profile:

Counties where project components located:	Population
1. Decatur	5,100
2. Norton	6,700
3. Phillips	8,000
4. Rooks	7,100
5. Osborne	6,200
6. Russell	9,000
7. Ellsworth	6,200
8. Rice	12,000
9. McPherson	25,400
Other Counties included in local study area:	
Ellis	25,500
Total	111,200

Communities	County/ Parish	State	1975 Population	Distance (miles)	Milepost
Russell	Russell	Kansas	5,227	15	505
Hays	Ellis	Kansas	16,544	36	505

Temporary Housing Availability:

Community	Hotel/Motel rooms	Hotel/Motel Construction	Rental units	Rental Vacancy Rate (%)	Rental Unit Construction
Russell	40/155	none	40	very low	none
Hays	741	none	unknown	low	none

Mobile Home Parks/spaces	RV Parks/Spaces	Mobile home spaces vacant, planned, or under construction
3/50	none	none
10/365	1/18	28 vacant

Construction Activities: pipeline spread: II construction period: 3rd + 4th 1/4 1983

Construction spread workforce profile: assumed local/nonlocal ratio 50/50

Total Workers	Nonlocal Workers	Mobile Population	Nonlocals with Mobile Living Quarters	Demand for Temporary Housing Units		
				Single Workers	Workers With Families	Total
Typical: 670	335	436	80	161	41	202
Rough Terrain: (748)	(374)	486	89	180	46	226

Pump Station: No. MB-5 at mp 408 Peak Manpower: 49 ea. Construction Period: 1983-1984
No. MB-6 at mp 550 Assumed local/nonlocal ratio 50/50

Pump Station	Nearby Community	County/ Parish	State	Population (1975)	Hwy. Dist. (miles)	Milepost
No. MB-5	Norton	Norton	Kansas	3,549	8	408
No. MB-6	Ellsworth	Ellsworth	Kansas	2,500	17	550

Sources:
U.S. Bureau of the Census 1978
Dreiling 1980
Hoffman 1980

ESTIMATES OF ETSI PROPERTY TAXES AND COMPARISON WITH EXISTING COUNTY PROPERTY TAXES 1976-1977, NORTH KANSAS

County	Estimated ETSI Property Tax[1] (1980 Dollars)			County Local Property Tax[2] 1976-77		Evaluation of ETSI[3] (1980 $) Revenues			
	Assessed Valuation of ETSI Components (X $1000)	Tax Factor (Percent)	Revenues (X $1000)	Assessed Valuation Subject to tax (X $1000)	Property Tax Revenues (X $1000)	ETSI Assesssed Valuation and Existing Assessed Valuation (X $1000) 1+4	ETSI Assessed Valuation As a percent of Existing Assessed Valuation (X $1000) 1÷4	Sum ETSI Revenues and 1976-77 Revenues (X $1000) 3+5	ETSI Revenues As a percent of 1976-77 Revenues 3÷5
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Kansas									
Decatur	36,600	1.45	530	27,979	2,192	64,579	131	2,722	24
Norton	38,000	1.41	540	27,019	2,452	65,019	141	2,992	22
Phillips	4,700	1.91	90	44,336	3,108	49,036	11	3,198	3
Rooks	40,600	1.50	610	48,395	2,854	88,995	84	3,464	21
Osborne	6,900	2.12	150	31,839	1,730	38,739	22	1,880	9
Russell	36,300	2.11	770	62,021	4,456	98,321	59	5,226	17
Elsworth	42,000	1.80	760	50,334	2,962	92,334	83	3,722	26
Rice	16,500	2.05	340	74,590	4,515	91,090	22	4,855	4
McPherson	20,900	1.86	390	115,743	8,720	136,643	18	9,110	4

[1]ETSI 1980. Assessed value and property taxes by county were estimated by ETSI for the EIS by extrapolating previously developed unit cost estimates for components and should in no way be construed as representing the cost estimate for the components. Values shown on this table were derived by ETSI as follows:

Sum of estimated cost of components in county x statewide ratio of assessed value to market value = assessed valuation of ETSI components x property tax rate (percent) assumed for county = estimated ETSI property taxes (in 1980 dollars)

[2]U.S. Bureau of the Census, 1977 Census of Governments.

[3]Column 6 is the sum of estimated ETSI assessed valuation (AV) as of 1980 and the 1976-77 total county assessed valuation (i.e., column 6 = column 1 + column 4).

Column 7 is the ratio of the ETSI AV to the 1976-77 total county AV expressed as a percent (i.e., column 7 = column 1 divided by column 4).

Column 8 is the sum of the estimated ETSI property tax revenues and the 1976-77 total county property tax revenues (i.e., column 8 = column 3 plus column 5).

Column 9 is the ratio of the estimated ETSI revenues to the 1976-77 total county property tax revenues expressed as a percent (i.e., column 9 = column 3 divided by column 5).

C515A.F

STUDY AREA PROFILE AND ASSESSMENT

Number: 5PA Name: South Kansas

Strip Maps: A-10 to A-14

Pertinent Alternatives: Proposed Action

Area Profile:

Counties where project components located:		Population
1. Stafford	ps no. 7	6,200
2. Reno		63,700
3. Kingman		8,900
4. Harper		7,900
5. Sumner		24,500
	Total	111,200

Other Counties included in local study area:

none

Communities	County/ Parish	State	1975 Population	Distance (miles)	Milepost
Kingman	Kingman	KS	3,650	7	590
Wichita	Sedgwick	KS	264,901	47	590

Temporary Housing Availability:

Community	Hotel/Motel rooms	Hotel/Motel Construction	Rental units	Rental Vacancy Rate (%)	Rental Unit Construction
Kingman	14/69	none	60	10	none
Wichita	1516/3459	unknown	unknown	unknown	unknown

Mobile Home Parks/spaces	RV Parks/Spaces	Mobile home spaces vacant, planned, or under construction
3/30	10	none
3000+	unknown	unknown

Construction Activities: pipeline spread: II construction period: 1st and 2nd 1/4 1984

Construction spread workforce profile: local/nonlocal ratio 50/50

Total Workers	Nonlocal Workers	Mobile Population	Nonlocals with Mobile Living Quarters	Demand for Temporary Housing Units		
				Single Workers	Workers With Families	Total
Typical:						
670	335	436	80	161	41	202
Rough Terrain:						
(748)	(374)	(486)	(89)	(180)	(46)	(226)

Pump Station: No. P-7 at mi 560.6 Peak Manpower: 49 Construction Period: 1983 - 1984

Nearby Community	County/ Parish	State	Population (1975)	Hwy. Dist. (miles)	Milepost
Stafford	Stafford	Kansas	2,500	2	560.6

Sources:
U.S. Bureau of the Census 1980
Flickner 1980

ESTIMATES OF ETSI PROPERTY TAXES AND COMPARISON WITH EXISTING COUNTY PROPERTY TAXES 1976-1977, SOUTH KANSAS

County	Estimated ETSI Property Tax (1980 Dollars)[1]			County Local Property Tax 1976-77[2]		Evaluation of ETSI[3] (1980 $) Revenues			
	Assessed Valuation of ETSI Components (X $1000)	Tax Factor (Percent)	Revenues (X $1000)	Assessed Valuation Subject to tax (X $1000)	Property Tax Revenues (X $1000)	ETSI Assesssed Valuation and Existing Assessed Valuation (X $1000) 1+4	ETSI Assessed Valuation As a percent of Existing Assessed Valuation (X $1000) 1÷4	Sum ETSI Revenues and 1976-77 Revenues (X $1000) 3+5	ETSI Revenues As a percent of 1976-77 Revenues 3÷5
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Stafford	46,100	1.19	550	54,191	3,100	100,291	85	3,650	18
Reno	12,900	2.31	300	211,341	18,236	224,241	6	18,536	2
Kingman	33,600	1.33	450	68,608	3,834	102,208	49	4,284	12
Harper	16,100	2.26	360	52,093	3,382	68,193	31	3,742	7
Sumner	20,000	2.70	540	83,948	7,213	103,948	24	7,753	7

[1]ETSI 1980. Assessed value and property taxes by county were estimated by ETSI for the EIS by extrapolating previously developed unit cost estimates for components and should in no way be construed as representing the cost estimate for the components. Values shown on this table were derived by ETSI as follows:

Sum of estimated cost of components in county x statewide ratio of assessed value to market value = assessed valuation of ETSI components x property tax rate (percent) assumed for county = estimated ETSI property taxes (in 1980 dollars)

[2]U.S. Bureau of the Census, 1977 Census of Governments.

[3]Column 6 is the sum of estimated ETSI assessed valuation (AV) as of 1980 and the 1976-77 total county assessed valuation (i.e., column 6 = column 1 + column 4).

Column 7 is the ratio of the ETSI AV to the 1976-77 total county AV expressed as a percent (i.e., column 7 = column 1 divided by column 4).

Column 8 is the sum of the estimated ETSI property tax revenues and the 1976-77 total county property tax revenues (i.e., column 8 = column 3 plus column 5).

Column 9 is the ratio of the estimated ETSI revenues to the 1976-77 total county property tax revenues expressed as a percent (i.e., column 9 = column 3 divided by column 5).

C515A.F

STUDY AREA PROFILE AND ASSESSMENT

Number: 5MA Name: South Kansas

Strip Maps: A-37 to A-39

Pertinent Alternatives: Market, Pipeline/Barge

Area Profile:

Counties where project components located:	Population
1. Harvey	28,857
2. Sedgewick	345,224
3. Butler	39,696
4. Cowley	33,830
5. Chatauqua	4,673

Other Counties included in local study area:

Communities	County/ Parish	State	1975 Population	Distance (miles)	Milepost
Wichita	Sedgewick	KS	264,901	10	630
Hutchinson	Reno	KS	40,929	15	580
Newton	Harvey	KS	15,560	10	603

Temporary Housing Availability:

Community	Hotel/Motel rooms	Hotel/Motel Construction	Rental units	Rental Vacancy Rate (%)	Rental Unit Construction
Wichita	1516/3459	unknown	unknown	unknown	unknown

Mobile Home Parks/spaces	RV Parks/Spaces	Mobile home spaces vacant, planned, or under construction
3000+	unknown	unknown

Construction Activities: pipeline spread: II construction period: 1st + 2nd 1/4 1984

Construction spread workforce profile: assumed local/nonlocal ratio 50/50

Total Workers	Nonlocal Workers	Mobile Population	Nonlocals with Mobile Living Quarters	Demand for Temporary Housing Units: Single Workers	Workers With Families	Total
Typical: 670	335	436	80	161	41	202
Rough Terrain: (748)	(374)	(486)	(89)	(180)	(46)	(226)

Pump Station: No. MB-7 at MP 630 Peak Manpower: 49 Construction Period: 1983 - 1984
Assumed local/nonlocal ratio 50/50

Nearby Community	County/ Parish	State	Population (1975)	Hwy. Dist. (miles)	Milepost
Wichita	Sedgewick	KS	264,901	12	630

Sources:
U.S. Bureau of the Census 1978
City of Wichita 1980

ESTIMATES OF ETSI PROPERTY TAXES AND COMPARISON WITH EXISTING COUNTY PROPERTY TAXES 1976-1977, SOUTH KANSAS

County	Estimated ETSI Property Tax[1] (1980 Dollars)			County Local Property Tax[2] 1976-77		Evaluation of ETSI[3] (1980 $) Revenues			
	Assessed Valuation of ETSI Components (X $1000)	Tax Factor (Percent)	Revenues (X $1000)	Assessed Valuation Subject to tax (X $1000)	Property Tax Revenues (X $1000)	ETSI Assesssed Valuation and Existing Assessed Valuation (X $1000) 1+4	ETSI Assessed Valuation As a percent of Existing Assessed Valuation (X $1000) 1÷4	Sum ETSI Revenues and 1976-77 Revenues (X $1000) 3+5	ETSI Revenues As a percent of 1976-77 Revenues 3÷5
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Harvey	27,800	2.40	670	104,094	9,556	131,894	27	10,226	7
Sedgwick	14,300	2.27	330	1,012,609	90,077	1,026,909	1	90,407	0.3
Butler	42,300	2.06	870	149,370	11,866	191,670	28	12,736	7
Cowley	27,300	2.31	630	113,120	8,986	140,420	24	9,616	7
Chautaugua	19,400	2.27	440	18,527	1,366	27,926	105	1,806	32

[1]ETSI 1980. Assessed value and property taxes by county were estimated by ETSI for the EIS by extrapolating previously developed unit cost estimates for components and should in no way be construed as representing the cost estimate for the components. Values shown on this table were derived by ETSI as follows:

Sum of estimated cost of components in county x statewide ratio of assessed value to market value = assessed valuation of ETSI components x property tax rate (percent) assumed for county = estimated ETSI property taxes (in 1980 dollars)

[2]U.S. Bureau of the Census, 1977 Census of Governments.

[3]Column 6 is the sum of estimated ETSI assessed valuation (AV) as of 1980 and the 1976-77 total county assessed valuation (i.e., column 6 = column 1 + column 4).

Column 7 is the ratio of the ETSI AV to the 1976-77 total county AV expressed as a percent (i.e., column 7 = column 1 divided by column 4).

Column 8 is the sum of the estimated ETSI property tax revenues and the 1976-77 total county property tax revenues (i.e., column 8 = column 3 plus column 5).

Column 9 is the ratio of the estimated ETSI revenues to the 1976-77 total county property tax revenues expressed as a percent (i.e., column 9 = column 3 divided by column 5).

C515A.F

STUDY AREA PROFILE AND ASSESSMENT

Number: 8 Name: Northwest Arkansas

Strip Maps: A-18 and A-19

Pertinent Alternatives: Proposed Action, Market, Pipeline/Barge

Area Profile:

Counties where project components located:

	Population
Sequoyah, OK	28,600
Crawford, AR	33,400
Franklin, AR	13,700

Other Counties included in local study area:

Sebastian, AR

Communities	County/ Parish	State	1975 Population	Distance (miles)	Milepost
Fort Smith	Sebastian	AR	64,734	10	860

Temporary Housing Availability:

Community	Hotel/Motel rooms	Hotel/Motel Construction	Rental units	Rental Vacancy Rate (%)	Rental Unit Construction
Fort Smith	1111	none	4155	plentiful	100+

Mobile Home Parks/spaces	RV Parks/Spaces	Mobile home spaces vacant, planned, or under construction
3/n.a.	1/n.a.	unknown

Construction Activities: pipeline spread: III construction period: 4th 1/4 1983, 1st 1/4 1984

Construction spread workforce profile:

Total Workers	Nonlocal Workers	Mobile Population	Nonlocals with Mobile Living Quarters	Demand for Temporary Housing Units: Single Workers	Workers With Families	Total
Typical: 670	335	436	80	161	41	202
Rough Terrain: (748)	(374)	(486)	(89)	(180)	(46)	(226)

Pump Station: No. P-11 at mile 911 Peak Manpower: 49 Construction Period: 1983 - 1984

Nearby Community	County/ Parish	State	Population (1975)	Hwy. Dist. (miles)	Milepost
Fort Smith	Sebastian	AR	64,734	10	911

Sources:
U.S. Bureau of the Census 1978
Eichling 1980

ESTIMATES OF ETSI PROPERTY TAXES AND COMPARISON WITH EXISTING COUNTY PROPERTY TAXES 1976-1977, NORTHWEST ARKANSAS

County	Estimated ETSI Property Tax[1] (1980 Dollars)			County Local Property Tax[2] 1976-77		Evaluation of ETSI[3] (1980 $) Revenues			
	Assessed Valuation of ETSI Components (X $1000)	Tax Factor (Percent)	Revenues (X $1000)	Assessed Valuation Subject to tax (X $1000)	Property Tax Revenues (X $1000)	ETSI Assessed Valuation and Existing Assessed Valuation (X $1000) 1+4	ETSI Assessed Valuation As a percent of Existing Assessed Valuation (X $1000) 1÷4	Sum ETSI Revenues and 1976-77 Revenues (X $1000) 3+5	ETSI Revenues As a percent of 1976-77 Revenues 3÷5
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Oklahoma									
Sequoyah[4]	32,000	1.91	610	16,425	1,290	48,425	195	1,900	47
Arkansas									
Crawford	34,300	1.34	460	32,760	2,277	67,060	105	3,737	20
Franklin	16,400	1.28	210	19,877	1,270	36,277	83	1,480	17
Oklahoma									
Sequoyah[5]	10,100	1.91	190	16,425	1,290	26,525	61	1,480	15
Arakansas									
Crawford	34,300	1.34	460	32,760	2,277	67,060	105	3,737	20
Franklin	16,400	1.28	210	19,877	1,270	36,277	83	1,480	17

[1]ETSI 1980. Assessed value and property taxes by county were estimated by ETSI for the EIS by extrapolating previously developed unit cost estimates for components and should in no way be construed as representing the cost estimate for the components. Values shown on this table were derived by ETSI as follows:

Sum of estimated cost of components in county x statewide ratio of assessed value to market value = assessed valuation of ETSI components x property tax rate (percent) assumed for county = estimated ETSI property taxes (in 1980 dollars)

[2]U.S. Bureau of the Census, 1977 Census of Governments.

[3]Column 6 is the sum of estimated ETSI assessed valuation (AV) as of 1980 and the 1976-77 total county assessed valustion (i.e., column 6 = column 1 + column 4).

Column 7 is the ratio of the ETSI AV to the 1976-77 total county AV expressed as a percent (i.e., column 7 = column 1 divided by column 4).

Column 8 is the sum of the estimated ETSI property tax revenues and the 1976-77 total county property tax revenues (i.e., column 8 = column 3 plus column 5).

Column 9 is the ratio of the estimated ETSI revenues to the 1976-77 total county property tax revenues expressed as a percent (i.e., column 9 = column 3 divided by column 5).

[4]Proposed action slurry pipeline tax revenues

[5]Market alternative and pipeline-barge alternative slurry system tax revenues

C515A.F

STUDY AREA PROFILE AND ASSESSMENT

Number: 9 Name: North Central Arkansas

Strip Maps: A-19 to A-23

Pertinent Alternatives: Proposed Action, Market, Pipeline/Barge

Area Profile:

Counties where project components located:

	Population
Johnson	17,100
Pope	36,100
Conway	18,600
Van Buren	11,800
Cleburne	15,800
Perry	7,400
Total	106,800

Other Counties included in local study area:

Faulkner

Communities	County/ Parish	State	1975 Population	Distance (miles)	Milepost
Clarksville	Johnson	AR	4,939	5	985
Russellville	Pope	AR	13,790	5	997.4
Atkins	Pope	AR	2,500	5	997.4
Morrilton	Conway	AR	6,630	10	1003
Conway	Faulkner	AR	16,734	30	1003

Temporary Housing Availability:

Community	Hotel/Motel rooms	Hotel/Motel Construction	Rental units	Rental Vacancy Rate (%)	Rental Unit Construction
Russellville	420	none	unknown	very low	none
Batesvile	250	unknown	unknown	2 - 3	54

Mobile Home Parks/spaces	RV Parks/Spaces	Mobile home spaces vacant, planned, or under construction
7/na	na/100	none
100	unknown	100+

Construction Activities: pipeline spread: Mainville III, Independence V construction period: 2nd + 3rd 1/4 1984, 3rd 1/4 1983

Construction spread workforce profile: local/nonlocal ratio 50/50

	Total Workers	Nonlocal Workers	Mobile Population	Nonlocals with Mobile Living Quarters	Demand for Temporary Housing Units: Single Workers	Workers With Families	Total
Mainline Typical:	610	305	397	73	146	37	183
(Rough:)	(688)	(344)	(447)	(82)	(165)	(42)	(206)
Independence Lateral:							
Typical:	260	130	169	31	62	16	78

Pump Station: PMB-12 Atkins Jct., PMB(I)-1 Independence Lateral Peak Manpower: 49, 42 Construction Period: 1983 - 1984, 1983 - 1984

Pump Station	Nearby Community	County/ Parish	State	Population (1975)	Hwy. Dist. (miles)	Milepost
PMB-12, PMB(I)-1	Atkins	Pope	AR	2,500	5	997.4
PMB(I)-2	Heber Springs	Cleburne	AR	3,878	20	39

Sources:
U.S. Bureau of The Census 1978
Looney 1980
Kaminarides 1977

ESTIMATES OF ETSI PROPERTY TAXES AND COMPARISON WITH EXISTING COUNTY PROPERTY TAXES 1976-1977, NORTH CENTRAL ARKANSAS

County	Estimated ETSI Property Tax (1980 Dollars)[1]			County Local Property Tax 1976-77[2]		Evaluation of ETSI[3] (1980 $) Revenues			
	Assessed Valuation of ETSI Components (X $1000)	Tax Factor (Percent)	Revenues (X $1000)	Assessed Valuation Subject to tax (X $1000)	Property Tax Revenues (X $1000)	ETSI Assesssed Valuation and Existing Assessed Valuation (X $1000) 1+4	ETSI Assessed Valuation As a percent of Existing Assessed Valuation (X $1000) 1÷4	Sum ETSI Revenues and 1976-77 Revenues (X $1000) 3+5	ETSI Revenues As a percent of 1976-77 Revenues 3÷5
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Johnson	20,700	1.46	300	18,260	1,220	38,960	113	1,520	25
Pope	40,800	1.27	520	127,197	7,490	167,997	32	8,010	2
Conwsy	12,700	1.37	174	23,143	1,614	35,843	55	1,788	108
Van Buren	12,300	1.10	130	10,041	692	22,241	122	833	19
Cleburne	6,000	1.41	90	22,074	1,462	22,074	27	1,552	19
Perry	9,000	1.30	120	8,428	556	17,428	107	676	216

[1]ETSI 1980. Assessed value and property taxes by county were estimated by ETSI for the EIS by extrapolating previously developed unit cost estimates for components and should in no way be construed as representing the cost estimate for the components. Values shown on this table were derived by ETSI as follows:

Sum of estimated cost of components in county x statewide ratio of assessed value to market value = assessed valuation of ETSI components x property tax rate (percent) assumed for county = estimated ETSI property taxes (in 1980 dollars)

[2]U.S. Bureau of the Census, 1977 Census of Governments.

[3]Column 6 is the sum of estimated ETSI assessed valuation (AV) as of 1980 and the 1976-77 total county assessed valuation (i.e., column 6 = column 1 + column 4).

Column 7 is the ratio of the ETSI AV to the 1976-77 total county AV expressed as a percent (i.e., column 7 = column 1 divided by column 4).

Column 8 is the sum of the estimated ETSI property tax revenues and the 1976-77 total county property tax revenues (i.e., column 8 = column 3 plus column 5).

Column 9 is the ratio of the estimated ETSI revenues to the 1976-77 total county property tax revenues expressed as a percent (i.e., column 9 = column 3 divided by column 5).

C515A.F

STUDY AREA PROFILE AND ASSESSMENT

Number: 12 Name: South Arkansas - Mainline

Strip Maps: A-25 and A-26

Pertinent Alternatives: Proposed Action, Market Alternative

Area Profile:

Counties where project components located:	Population
Cleveland	
Bradley	12,700
Ashley	25,200
Other Counties included in local study area:	
Drew	17,200
Union	44,600

Communities	County/ Parish	State	1975 Population	Distance (miles)	at Milepost
Warren	Bradley	AR	6,100	1	1137
Monticello	Drew	AR	6,700	20	1137
Crossett	Ashley	AR	6,300	5	1168
El Dorado	Union	AR	24,500	37	1168

Temporary Housing Availability:

Community	Hotel/Motel rooms	Hotel/Motel Construction	Rental units	Rental Vacancy Rate (%)	Rental Unit Construction
Pine Bluff	450+	none	500	High	2/120

Mobile Home Parks/spaces	RV Parks/Spaces	Mobile home spaces vacant, planned, or under construction
7/300+	1/NA	NA

Construction Activities: pipeline spread: V construction period: 1st 1/4 1984

Construction spread workforce profile: local/nonlocal ratio 50/50

Total Workers	Nonlocal Workers	Mobile Population	Nonlocals with Mobile Living Quarters	Demand for Temporary Housing Units: Single Workers	Workers With Families	Total
Typical: 550	275	358	66	132	33	165
Rough Terrain: (615)	(307)	(399)	(74)	(147)	(37)	(184)

Pump Station: No. PM-14 at mile 1137.6 Peak Manpower: 49 Construction Period: 1983 - 1984

Nearby Community	County/ Parish	State	Population (1975)	Hwy. Dist. (miles)	Milepost
Warren	Bradley	AR	6,139	2	1137.6

Sources:
U.S. Bureau of the Census 1978
Chamber of Commerce (Pine Bluff, AR) 1980

ESTIMATES OF ETSI PROPERTY TAXES AND COMPARISON WITH EXISTING COUNTY PROPERTY TAXES 1976-1977, SOUTH ARKANSAS

County	Estimated ETSI Property Tax (1980 Dollars)[1]			County Local Property Tax 1976-77[2]		Evaluation of ETSI[3] (1980 $) Revenues			
	Assessed Valuation of ETSI Components (X $1000)	Tax Factor (Percent)	Revenues (X $1000)	Assessed Valuation Subject to tax (X $1000)	Property Tax Revenues (X $1000)	ETSI Assesssed Valuation and Existing Assessed Valuation (X $1000) 1+4	ETSI Assessed Valuation As a percent of Existing Assessed Valuation (X $1000) 1÷4	Sum ETSI Revenues and 1976-77 Revenues (X $1000) 3+5	ETSI Revenues As a percent of 1976-77 Revenues 3÷5
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Cleveland	14,900	1.30	190	8,484	476	23,384	176	666	40
Bradley	30,900	1.35	420	18,897	1,089	48,797	164	1,509	39
Ashley	10,100	1.12	110	51,299	2,830	61,399	20	2,940	4

[1]ETSI 1980. Assessed value and property taxes by county were estimated by ETSI for the EIS by extrapolating previously developed unit cost estimates for components and should in no way be construed as representing the cost estimate for the components. Values shown on this table were derived by ETSI as follows:

Sum of estimated cost of components in county x statewide ratio of assessed value to market value = assessed valuation of ETSI components x property tax rate (percent) assumed for county = estimated ETSI property taxes (in 1980 dollars)

[2]U.S. Bureau of the Census, 1977 Census of Governments.

[3]Column 6 is the sum of estimated ETSI assessed valuation (AV) as of 1980 and the 1976-77 total county assessed valuation (i.e., column 6 = column 1 + column 4).

Column 7 is the ratio of the ETSI AV to the 1976-77 total county AV expressed as a percent (i.e., column 7 = column 1 divided by column 4).

Column 8 is the sum of the estimated ETSI property tax revenues and the 1976-77 total county property tax revenues (i.e., column 8 = column 3 plus column 5).

Column 9 is the ratio of the estimated ETSI revenues to the 1976-77 total county property tax revenues expressed as a percent (i.e., column 9 = column 3 divided by column 5).

STUDY AREA PROFILE AND ASSESSMENT

Number: 13 Name: North Louisiana Mainline

Strip Maps: A-26 to A-28

Pertinent Alternatives: Proposed Action, Market Alternative

Area Profile:

Counties where project components located:	Population
Moorehouse	33,700
Oachita	130,700
Caldwell	10,200
La Salle	15,200

Other Counties included in local study area:

none

Communities	County/ Parish	State	1975 Population	Distance (miles)	Milepost
Monroe	Oachita	LA	61,016	5	1215

Temporary Housing Availability:

Community	Hotel/Motel rooms	Hotel/Motel Construction	Rental units	Rental Vacancy Rate (%)	Rental Unit Construction
Monroe	1500	250	unknown	5	none

Mobile Home Parks/spaces	RV Parks/Spaces	Mobile home spaces vacant, planned, or under construction
spaces available	2/110	unknown

Construction Activities: pipeline spread: V construction period: 2nd + 3rd 1/4 1984

Construction spread workforce profile: local/nonlocal ratio 50/50

Total Workers	Nonlocal Workers	Mobile Population	Nonlocals with Mobile Living Quarters	Demand for Temporary Housing Units		
				Single Workers	Workers With Families	Total
Typical: 550	275	358	66	132	33	165
Rough Terrain: (615)	(307)	(399)	(74)	(147)	(37)	(184)

Pump Station: No. PM-15 at mile 1203.6 / No PM-16 at mile 1257.6 Peak Manpower: 49 / 49 Construction Period: 1983 - 1984 / 1983 - 1984

Pump Station	Nearby Community	County/ Parish	State	Population (1975)	Hwy. Dist. (miles)	Milepost
No. PM-15	Monroe	Oachita	LA	61,016	12	1204
No. PM-16	Olla	La Salle	LA	2,500	10	1258

Sources:
U.S. Bureau of the Census 1980
Braun 1980
Tarzer 1980

ESTIMATES OF ETSI PROPERTY TAXES AND COMPARISON WITH EXISTING COUNTY PROPERTY TAXES 1976-1977, NORTH LOUISIANA

County	Estimated ETSI Property Tax[1] (1980 Dollars)			County Local Property Tax[2] 1976-77		Evaluation of ETSI[3] (1980 $) Revenues			
	Assessed Valuation of ETSI Components (X $1000)	Tax Factor (Percent)	Revenues (X $1000)	Assessed Valuation Subject to tax (X $1000)	Property Tax Revenues (X $1000)	ETSI Assesssed Valuation and Existing Assessed Valuation (X $1000) 1+4	ETSI Assessed Valuation As a percent of Existing Assessed Valuation (X $1000) 1÷4	Sum ETSI Revenues and 1976-77 Revenues (X $1000) 3+5	ETSI Revenues As a percent of 1976-77 Revenues 3÷5
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Louisiana									
Morehouse	12,600	1.20	150	59,748	3,496	72,348	21	3,646	4
Ouachita	30,300	1.25	380	196,872	13,354	227,172	15	13,734	3
LaSalle	31,100	1.88	590	24,510	1,976	55,610	127	2,566	30
Caldwell	14,800	2.55	380	12,874	1,374	27,674	115	1,754	28

[1]ETSI 1980. Assessed value and property taxes by county were estimated by ETSI for the EIS by extrapolating previously developed unit cost estimates for components and should in no way be construed as representing the cost estimate for the components. Values shown on this table were derived by ETSI as follows:

Sum of estimated cost of components in county x statewide ratio of assessed value to market value = assessed valuation of ETSI components x property tax rate (percent) assumed for county = estimated ETSI property taxes (in 1980 dollars)

[2]U.S. Bureau of the Census, 1977 Census of Governments.

[3]Column 6 is the sum of estimated ETSI assessed valuation (AV) as of 1980 and the 1976-77 total county assessed valuation (i.e., column 6 = column 1 + column 4).

Column 7 is the ratio of the ETSI AV to the 1976-77 total county AV expressed as a percent (i.e., column 7 = column 1 divided by column 4).

Column 8 is the sum of the estimated ETSI property tax revenues and the 1976-77 total county property tax revenues (i.e., column 8 = column 3 plus column 5).

Column 9 is the ratio of the estimated ETSI revenues to the 1976-77 total county property tax revenues expressed as a percent (i.e., column 9 = column 3 divided by column 5).

C515A.F

STUDY AREA PROFILE AND ASSESSMENT

Number: 19CA Name: Southeast Wyoming

Strip Maps: A-43 and A-44

Pertinent Alternatives: Colorado Alternative Pipeline Route

Area Profile:

Counties where project components located:	Population
Goshen, WY	12,000
Laramie, WY	63,000
Other Counties included in local study area:	
Platte, WY	7,300

Communities	County/ Parish	State	1975 Population	Distance (miles)	Milepost
Wheatland	Platte	WY	2,770	20	126
Torrington	Goshen	WY	4,667	25	110
Cheyenne	Laramie	WY	46,677	15	190
Scottsbluff	Scotts Bluff	NB	12,655	55	190

Temporary Housing Availability: (1980) (Woodward-Clyde Telephone Survey)

Community	Hotel/Motel rooms	Hotel/Motel Construction	Rental units	Rental Vacancy Rate (%)	Rental Unit Construction
Cheyenne	1700	207	7173	3	unknown
Scottsbluff	500	none	330	10	12

Mobile Home Parks/spaces	RV Parks/Spaces	Mobile home spaces vacant, planned, or under construction
1062	317	200 (const.)
4 parks	1 park	none

Construction Activities: pipeline spread: I construction period: 3/1984

Construction spread workforce profile: local non/local ratio 50/50

Total Workers	Nonlocal Workers	Mobile Population	Nonlocals with Mobile Living Quarters	Demand for Temporary Housing Units: Single Workers	Workers With Families	Total
Typical: 670	503	654	121	241	61	302
Rough Terrain: (748)	(562)	(731)	(135)	(269)	(68)	(337)

Pump Station: none Peak Manpower: _____ Construction Period: _____

Nearby Community	County/ Parish	State	Population (1975)	Hwy. Dist. (miles)	Milepost

Sources:
U.S. Bureau of the Census 1978
Gonsior 1980
Chamber of Commerce (Scottsbluff, NB) 1980
Berzina 1980

ESTIMATES OF ETSI PROPERTY TAXES AND COMPARISON WITH EXISTING COUNTY PROPERTY TAXES 1976-1977, SOUTHEAST WYOMING

County	Estimated ETSI Property Tax[1] (1980 Dollars)			County Local Property Tax[2] 1976-77		Evaluation of ETSI[3] (1980 $) Revenues			
	Assessed Valuation of ETSI Components (X $1000)	Tax Factor (Percent)	Revenues (X $1000)	Assessed Valuation Subject to tax (X $1000)	Property Tax Revenues (X $1000)	ETSI Assessed Valuation and Existing Assessed Valuation (X $1000) 1+4	ETSI Assessed Valuation As a percent of Existing Assessed Valuation (X $1000) 1÷4	Sum ETSI Revenues and 1976-77 Revenues (X $1000) 3+5	ETSI Revenues As a percent of 1976-77 Revenues 3÷5
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Goshen	167,400	.768	1,286	37,099	2,628	204,499	451	3,914	49
Laramie	103,700	.694	721	145,853	14,620	249,623	71	15,341	5

[1]ETSI 1980. Assessed value and property taxes by county were estimated by ETSI for the EIS by extrapolating previously developed unit cost estimates for components and should in no way be construed as representing the cost estimate for the components. Values shown on this table were derived by ETSI as follows:

Sum of estimated cost of components in county x statewide ratio of assessed value to market value = assessed valuation of ETSI components x property tax rate (percent) assumed for county = estimated ETSI property taxes (in 1980 dollars)

[2]U.S. Bureau of the Census, 1977 Census of Governments.

[3]Column 6 is the sum of estimated ETSI assessed valuation (AV) as of 1980 and the 1976-77 total county assessed valuation (i.e., column 6 = column 1 + column 4).

Column 7 is the ratio of the ETSI AV to the 1976-77 total county AV expressed as a percent (i.e., column 7 = column 1 divided by column 4).

Column 8 is the sum of the estimated ETSI property tax revenues and the 1976-77 total county property tax revenues (i.e., column 8 = column 3 plus column 5).

Column 9 is the ratio of the estimated ETSI revenues to the 1976-77 total county property tax revenues expressed as a percent (i.e., column 9 = column 3 divided by column 5).

C515A.F

STUDY AREA PROFILE AND ASSESSMENT

Number: 20CA Name: Northeast Colorado

Strip Maps: A-45 to A-47

Pertinent Alternatives: Colorado Alternative Pipeline Route

Area Profile:

Counties where project components located:	Population
1. Weld	107,400
2. Logan	19,500
3. Washington	5,500
4. Yuma	8,900
Other Counties included in local study area:	
5. Morgan	21,800

Communities	County/ Parish	State	1975 Population	Distance (miles)	Milepost
Sterling	Logan	CO	10,777	10	267
Brush	Morgan	CO	3,860	20	267
Fort Morgan	Morgan	CO	8,475	30	267
Wray	Yuma	CO	2,500	20	345

Temporary Housing Availability: (1980)

Community	Hotel/Motel rooms	Hotel/Motel Construction	Rental units	Rental Vacancy Rate (%)	Rental Unit Construction
Sterling	400	none	1000	2	60

Mobile Home Parks/spaces	RV Parks/Spaces	Mobile home spaces vacant, planned, or under construction
2/240	1/100	unknown

Construction Activities: pipeline spread: I construction period: 2nd 1/4 1984

Construction spread workforce profile: assumed local nonlocal ratio 25/75

Total Workers	Nonlocal Workers	Mobile Population	Nonlocals with Mobile Living Quarters	Demand for Temporary Housing Units: Workers Single Workers	Workers With Families	Total
Typical: 670	503	654	121	241	61	302
Rough Terrain: (748)	(562)	(731)	(135)	(269)	(68)	(337)

Pump Station: C-4 / C-5 Peak Manpower: 49 / 49 Construction Period: 1983 - 1984 / 1983 - 1984

Pump Station	Nearby Community	County/ Parish	State	Population (1975)	Hwy. Dist. (miles)	Milepost
C-4	Sterling	Logan	CO	10,777	52	228
C-5	Wray	Yuma	CO	2,500	20	345

Sources:
U.S. Bureau of the Census 1980
City Building Inspector (Sterling, CO) 1980
Morrison 1980

ESTIMATES OF ETSI PROPERTY TAXES AND COMPARISON WITH EXISTING COUNTY PROPERTY TAXES 1976-1977, NORTHEAST COLORADO

County	Estimated ETSI Property Tax[1] (1980 Dollars)			County Local Property Tax[2] 1976-77		Evaluation of ETSI[3] (1980 $) Revenues			
	Assessed Valuation of ETSI Components (X $1000)	Tax Factor (Percent)	Revenues (X $1000)	Assessed Valuation Subject to tax (X $1000)	Property Tax Revenues (X $1000)	ETSI Assesssed Valuation and Existing Assessed Valuation (X $1000) 1+4	ETSI Assessed Valuation As a percent of Existing Assessed Valuation (X $1000) 1÷4	Sum ETSI Revenues and 1976-77 Revenues (X $1000) 3+5	ETSI Revenues As a percent of 1976-77 Revenues 3÷5
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Colorado									
Weld	47,700	1.80	860	483,119	35,950	530,819	10	36,810	2
Logan	30,300	1.80	550	84,061	7,074	114,361	36	7,624	8
Washington	22,400	1.80	400	50,720	2,686	73,120	44	3,086	15
Yuma	69,700	1.80	1,250	52,958	3,467	122,658	132	4,717	36

[1]ETSI 1980. Assessed value and property taxes by county were estimated by ETSI for the EIS by extrapolating previously developed unit cost estimates for components and should in no way be construed as representing the cost estimate for the components. Values shown on this table were derived by ETSI as follows:

Sum of estimated cost of components in county x statewide ratio of assessed value to market value = assessed valuation of ETSI components x property tax rate (percent) assumed for county = estimated ETSI property taxes (in 1980 dollars)

[2]U.S. Bureau of the Census, 1977 Census of Governments.

[3]Column 6 is the sum of estimated ETSI assessed valuation (AV) as of 1980 and the 1976-77 total county assessed valuation (i.e., column 6 = column 1 + column 4).

Column 7 is the ratio of the ETSI AV to the 1976-77 total county AV expressed as a percent (i.e., column 7 = column 1 divided by column 4).

Column 8 is the sum of the estimated ETSI property tax revenues and the 1976-77 total county property tax revenues (i.e., column 8 = column 3 plus column 5).

Column 9 is the ratio of the estimated ETSI revenues to the 1976-77 total county property tax revenues expressed as a percent (i.e., column 9 = column 3 divided by column 5).

STUDY AREA PROFILE AND ASSESSMENT

Number: 21CA Name: West Kansas

Strip Maps: A-47 to A-51

Pertinent Alternatives: Colorado Alternative

Area Profile:

Counties where project components located:	Population
1. Cheyenne	4,100
2. Sherman	8,200
3. Thomas	8,100
4. Sheridan	4,000
5. Gore	4,000
6. Trego	4,500
7. Ellis	25,500
8. Rush	5,000
9. Barton	30,900
10. Ellsworth	6,200
11. Rice	12,000

Other Counties included in local study area:

none

Communities	County/ Parish	State	1975 Population	Distance (miles)	Milepost
St. Francis	Cheyenne	KS	2,500	1	370
Goodland	Sherman	KS	5,636	28	420
Colfax	Thomas	KS	5,014	5	420
Hays	Ellis	KS	16,544	12	519
Great Bend	Barton	KS	16,098	16	572

Temporary Housing Availability:

Community	Hotel/Motel rooms	Hotel/Motel Construction	Rental units	Rental Vacancy Rate (%)	Rental Unit Construction
Colby	63/246	150	70	20	unknown
Hays	741	none	unknown	low	none

Mobile Home Parks/spaces	RV Parks/Spaces	Mobile home spaces vacant, planned, or under construction
6/125	1/15 ac.	25 vac.
10/365	1/18	28 vac.
		56 plnd.

Construction Activities: pipeline spread: II construction period: 3rd + 4th 1/4 1983

Construction spread workforce profile: assumed local/nonlocal ratio 50/50

Total Workers	Nonlocal Workers	Mobile Population	Nonlocals with Mobile Living Quarters	Demand for Temporary Housing Units: Workers Single Workers	Workers With Families	Total
Typical: 670	335	436	80	161	41	202
Rough Terrain: (748)	(374)	(486)	(89)	(180)	(46)	(226)

Pump Station: C-6 Peak Manpower: 49 Construction Period: 1983 - 1984

Nearby Community	County/ Parish	State	Population (1975)	Hwy. Dist. (miles)	Milepost
Hays	Ellis	KS	16,544	12	519

Sources:
U.S. Bureau of the Census 1980
Chamber of Commerce (Colby, KS) 1980
Dreiling 1980

ESTIMATES OF ETSI PROPERTY TAXES AND COMPARISON WITH EXISTING COUNTY PROPERTY TAXES 1976-1977, WEST KANSAS

County	Estimated ETSI Property Tax (1980 Dollars)[1]			County Local Property Tax 1976-77[2]		Evaluation of ETSI[3] (1980 $) Revenues			
	Assessed Valuation of ETSI Components (X $1000)	Tax Factor (Percent)	Revenues (X $1000)	Assessed Valuation Subject to tax (X $1000)	Property Tax Revenues (X $1000)	ETSI Assesssed Valuation and Existing Assessed Valuation (X $1000) 1+4	ETSI Assessed Valuation As a percent of Existing Assessed Valuation (X $1000) 1÷4	Sum ETSI Revenues and 1976-77 Revenues (X $1000) 3+5	ETSI Revennes As a percent of 1976-77 Revenues 3÷5
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Kansas									
Cheyenne	40,600	1.32	540	24,081	1,112	64,681	169	1,652	49
Sherman	8,000	1.82	150	44,149	3,118	52,149	18	3,268	5
Thomas	45,400	1.36	620	48,958	4,472	94,358	93	5,092	14
Sheridan	10,900	1.46	160	24,566	1,710	35,466	44	1,870	9
Gove	24,900	1.37	340	32,765	2,047	57,665	76	2,387	17
Trego	35,000	1.22	430	26,701	1,608	61,701	131	2,038	27
Elis	33,700	1.77	600	100,744	6,902	134,444	33	7,502	9
Rush	29,200	1.28	370	33,714	2,566	62,914	87	2,936	14
Barton	18,600	1.97	370	148,818	9,368	167,418	12	9,738	4
Ellsworth	42,000	1.80	760	50,334	2,962	92,334	83	3,722	8
Rice**	16,500	2.05	340	74,590	4,515	91,090	22	4,855	8

[1] ETSI 1980. Assessed value and property taxes by county were estimated by ETSI for the EIS by extrapolating previously developed unit cost estimates for components and should in no way be construed as representing the cost estimate for the components. Values shown on this table were derived by ETSI as follows:

Sum of estimated cost of components in county x statewide ratio of assessed value to market value = assessed valuation of ETSI components x property tax rate (percent) assumed for county = estimated ETSI property taxes (in 1980 dollars)

[2] U.S. Bureau of the Census, 1977 Census of Governments.

[3] Column 6 is the sum of estimated ETSI assessed valuation (AV) as of 1980 and the 1976-77 total county assessed valuation (i.e., column 6 = column 1 + column 4).

Column 7 is the ratio of the ETSI AV to the 1976-77 total county AV expressed as a percent (i.e., column 7 = column 1 divided by column 4).

Column 8 is the sum of the estimated ETSI property tax revenues and the 1976-77 total county property tax revenues (i.e., column 8 = column 3 plus column 5).

Column 9 is the ratio of the estimated ETSI revenues to the 1976-77 total county property tax revenues expressed as a percent (i.e., column 9 = column 3 divided by column 5).

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